SOUTHERN REGIONAL MEETING ABSTRACTS
Cardiovascular Club I
11:00 AM
Thursday, February 18, 2016

1 ROLE OF CYCLIN DEPENDENT KINASE INHIBITOR P27 IN CARDIOMYOCYTE REGENERATION

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10.1136/jim-2015-000035.1

Purpose of Study Neonatal mammalian hearts have the ability to undergo cardiomyocyte regeneration for a short period of time after birth through proliferation of pre-existing cardiomyocytes. This regenerative window is lost by the first week of life coinciding with cell cycle arrest. The exact mechanism of how postnatal cardiomyocytes regulate proliferation remains unclear. We hypothesize a specific cyclin-dependent kinase inhibitor $p27^{Kip1}$ (p27) plays a prominent role in cardiomyocyte proliferation both in the neonatal period and in adults following myocardial injury.

Methods Used Cardiomyocyte specific α-myosin heavy chain deletion of p27 using Cre recombinase (cKO) mice were harvested and compared with wild type (WT) mice in the postnatal period. Immunostaining using mitotic markers phospho-histone 3 (pH3) and Aurora B kinase (AurB) were used to quantify proliferation along with wheat germ agglutinin (WGA) to determine cell size differences. Cardiomyocyte and nucleation counts were done by collagenase digestion. Cardiac function was assessed using M-mode echocardiography. Conditional deletion of p27 in the adult heart was also investigated using a $p27^{f/f}$ αMHC MerCreMer mouse model (iKO) that allowed specific deletion of p27 following tamoxifen administration. These p27 iKO mice were induced to explore the re-activation of cardiomyocyte mitosis as well as return of function following ischemic injury.

Summary of Results p27 cKO extended of the proliferative window up to an additional week (6-fold) with no harmful effect in cardiac function. Proliferation was no longer seen by 1 month of age. In the adult mice, p27 iKO showed re-activation of mitotic cardiomyocytes throughout the heart (5-fold). In addition, we showed a decrease in cell size ($p=0.023$) with no significant change in heart weight/body weight ratio. Following myocardial infarction (MI), p27 iKO mice similarly showed robust proliferation throughout the myocardium as well as a brisk return of cardiac function compared to WT at six weeks post MI.

Conclusions p27 has an important role in cardiomyocyte proliferation both in extending the neonatal proliferative window and increasing the number of mitotic cardiomyocyte in the adult heart and may have a therapeutic role in regulating cardiomyocyte cell cycle regeneration.

2 ATTENUATION OF RENAL FIBROSIS AND INFLAMMATION IN NATRIURETIC PEPTIDE RECEPTOR A GENE-TARGETED MICE BY EPIGENETIC MECHANISMS OF SODIUM BUTYRATE- AND RETINOIC ACID

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10.1136/jim-2015-000035.2

Purpose of Study Mice lacking functional guanylyl cyclase/natriuretic peptide receptor-A (GC-A/NPRA) gene (*Npr1*) exhibit hypertension, kidney disease, and heart failure. The objective of the present study was to determine the combined effect of sodium butyrate (NaBu), a histone deacetylase (HDAC) inhibitor and all-trans retinoic acid (ATRA) on attenuation of renal fibrosis and inflammation in *Npr1* gene-disrupted mutant mice.

Methods Used Adult (18–20 week old) male *Npr1* gene-disrupted heterozygous (1-copy; $Npr1^{+/-}$) wild-type (2-copy; $Npr1^{+/+}$), and gene-duplicated (3-copy; $Npr1^{++/+}$) mice were treated by injecting ATRA-NaBu hybrid drug (1.0 mg/kg/day) intraperitoneally for 2-weeks.

Summary of Results A marked attenuation in tubulo-interstitial fibrosis was observed in $Npr1^{+/-}$ mice after treatment with ATRA-NaBu (50%, $p<0.001$). Western blot analyses exhibited the reduction in renal expression of collagen type I alpha 2 and transforming growth factor-beta in ATRA-NaBu-treated $Npr1^{+/-}$ mice compared with vehicle-treated mice. A significant decrease in systolic blood pressure was observed in ATRA-NaBu-treated $Npr1^{+/-}$ mice. The ATRA-NaBu treatment enhanced plasma cGMP levels in $Npr1^{+/-}$, $Npr1^{+/+}$, and $Npr1^{++/+}$ mice. Western blot analyses confirmed the reduction in renal expression of tumor necrosis factor-alpha and interleukin-6 in ATRA-NaBu-treated $Npr1^{+/-}$ mice compared with control mice. Interestingly, ATRA-NaBu significantly enhanced the levels of immunosuppressive cytokine IL-10 in the kidneys of $Npr1^{+/-}$, $Npr1^{+/+}$, and $Npr1^{++/+}$ mice. Moreover, the increased HDAC activity in $Npr1^{+/-}$ mice was markedly reduced by ATRA-NaBu treatment compared with untreated $Npr1^{+/-}$ control mice.

Conclusions The present results provide direct evidence that ATRA-NaBu acts as a potent antifibrotic agent and repairs the renal pathology in $Npr1^{+/-}$ mice, which will have important implications in prevention of hypertension-related renal pathophysiological conditions.

3 DIFFERENCES IN VENTRICULAR ARRHYTHMIA BURDEN BETWEEN HIGH VERSUS LOW POTENCY STATINS IN PATIENTS WITH NON-ISCHEMIC CARDIOMYOPATHY

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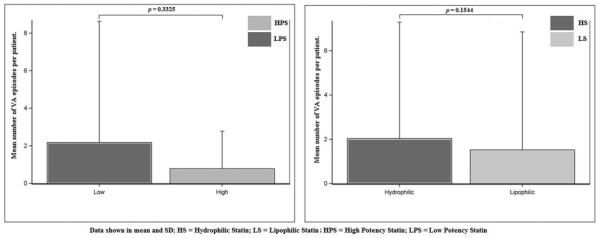
10.1136/jim-2015-000035.3



Abstract 3 Figure 1

Purpose of Study Ventricular arrhythmia (VA) occurs in patients with ischemic and non-ischemic cardiomyopathy (NICM). Recent studies have shown that statin therapy reduces the frequency of VA episodes and the number of appropriate implantable Cardioverter-Defibrillator (ICD) therapies in patients with NICM. We hypothesized that high potency statins may be more efficacious than low potency statins in reducing the number of VA episodes.
Methods Used A retrospective study of 102 patients with NICM and ICD (primary prevention) receiving statin therapy between the years 2000 and 2010 at our institution. Data was collected through devices for 2 years following the initiation of therapy. If the study subject was already on statin, the data was collected for 2 years following ICD implantation. All registered VA episodes were individually reviewed to exclude supraventricular rhythm.
Summary of Results The mean age of study subjects was 59.8 years. Eighty-nine percent were on optimal medical therapy. There was no statistical difference in the mean number of VA episodes between patients taking high vs. low potency statins ($p=0.333$). There was no difference in the mean number of VA episodes between patients taking hydrophilic versus lipophilic statins ($p=0.154$). Diuretics use was associated with significantly higher VT/VF events (*84.4% vs. 68.3%*, $p= 0.024$).
Conclusions In patients with NICM with a primary prevention ICD and receiving statin therapy, there was a weak trend (not statistically significant) toward a fewer number of VA episodes in patients receiving high (compared to low) potency statins.

4 THE ATHEROSCLEROTIC PROCESS IN PSORIASIS IS DIRECTLY RELATED TO INFLAMMATION

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10.1136/jim-2015-000035.4

Purpose of Study We intended to study the morbidity and mortality in patients (P.) with psoriasis and find out if inflammation is the most important factor.
Methods Used Retrospective study of 46 patients with moderate to severe psoriasis admitted to the Cardiovascular Center of Puerto Rico and the Caribbean from 2007 to 2013 due to chest pain and suspected myocardial infarct. Coronary angiographic reports were reviewed and analyzed statistically by Fisher exact test with risk factors like diabetes mellitus, hypertension or hyperlipidemia. Population median age was 56 years and 72% were males.
Summary of Results The majority (63%) of the P. had metabolic syndrome (MetS). Analysis by Fisher exact test failed to show significative important correlation with risk factors like diabetes mellitus Type 2, hypertension or hyperlipidemia. 58.7% of patients had angiographic evidence of obstructive coronary disease (CAD). Thirty percent of patients had positive C-reactive protein. No prior myocardial infarction or strokes were found. All of them received either pharmacological or revascularization therapy with angioplasty or bypass surgery.
Conclusions In Hispanics, there is a lower incidence of CAD compared to Caucasians and African-Americans. We believe that persistent systemic inflammation in psoriasis in conjunction with the up-regulation of inflammatory mediators associated to MetS increases the risk of developing CAD. This shows that coronary artery disease in young P. with psoriasis is related to inflammation and not to others risk factors. This should be further investigated.

5 ASSOCIATIONS BETWEEN HUNTER TYPE A/B PERSONALITY TRAITS AND CARDIOVASCULAR RISK FACTORS FROM CHILDHOOD TO YOUNG ADULTHOOD

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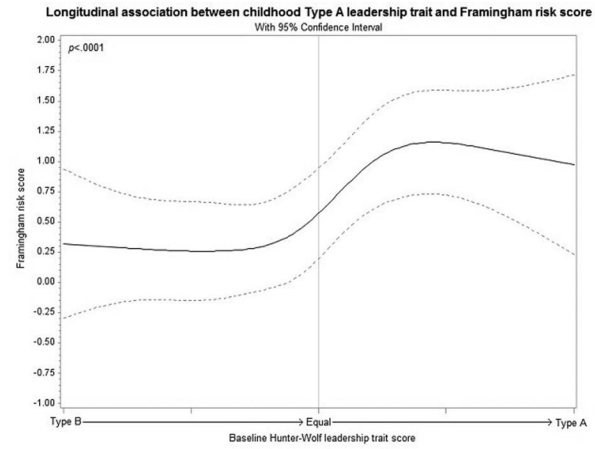
10.1136/jim-2015-000035.5

Purpose of Study Several studies have linked adult Type A personality with cardiovascular (CV) disease, but evidence is limited regarding associations between childhood personality type and CV risk factors. Here, we use the Hunter-Wolf A/B personality trait score to examine childhood personality and its cross-sectional and longitudinal associations with traditional CV risk factors.
Methods Used From 1984–1986, 3,396 children were surveyed and multivariable linear regression was used to test adjusted associations between personality and CV risk factors. To test longitudinal associations, subjects were followed through 2007 and general estimating equation models examined changes in risk factors and their associations with childhood personality traits.



Abstract 5 Figure 1

Summary of Results Mean(±SD) Hunter A/B score was 96.9±11.6, with 1,730 (50.9%) Type A subjects. After adjustment, alcohol use, gender, race, and BMI were associated with childhood personality ($p<.0001$, $p<.0001$, $p=.03$, and $p=.06$ respectively). After 11 years median follow-up, adult BMI ($p=.01$) and blood glucose ($p<.01$) were longitudinally associated with childhood personality. Of the four Type A personality traits, leadership was significantly associated with an increased Framingham risk score at follow-up ($p<.0001$).

Conclusions Childhood personality is associated with CV risk factors, and Type A children have higher BMIs. Additionally, children exhibiting strong leadership-oriented personality traits have worse cardiovascular risk profiles in early adulthood. Further research should examine whether childhood personality holds value in predicting CV risk progression.

6 HIGH DIETARY SODIUM BLUNTS EFFECTS OF MINERALOCORTICOID RECEPTOR ANTAGONISM ON LEFT VENTRICULAR HYPERTROPHY IN RESISTANT HYPERTENSION PATIENTS

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10.1136/jim-2015-000035.6

Purpose of Study Patients with resistant hypertension (RHTN) commonly have primary aldosteronism (PA), which is associated with left ventricular hypertrophy (LVH). Aldosterone activates mineralocorticoid receptors (MR) and induces hypertrophy. Experimental studies indicate a paradoxical activation of the MR in sodium-loaded rats despite adequate suppression of aldosterone. MR antagonists slow down cardiac hypertrophy. We hypothesized that the MR anatagonist spironolactone (SPL) would cause greater LVH reduction in patients on high Na diet independent of aldosterone.

Methods Used Overall 34 patients with RHTN, defined as BP≥140/90 mmHg despite ≥3 different medications, including a diuretic, were treated with SPL. Cardiac magnetic resonance imaging and biochemical evaluation was performed at baseline, 3 and 6 months in patients with PA and non-PA. PA was defined as renin activity (PRA)<1 ng/ml/h and urinary aldosterone ≥12 ug /24 h. We dichotomized patients according to UNa level (UNa ≥200 mEq/24 h: high Na diet) and PA status. LVH reduction was indexed by left ventricular mass (LVM) and interventricular septum thickness (IVS) regression.

Summary of Results LVM and IVS regression after treatment with SPL at 3 and 6 months was greater in patients with PA on a normal sodium diet and less pronounced in patients on a high sodium diet suggesting that Na blunts the effects of cardiac MR when treated with SPL. However, in patients with non-PA high Na intake did not blunt the effects of SPL.

Conclusions Contrary to our hypothesis, high dietary Na blunted LVH regression in patients with PA treated with SPL. Further studies are needed to elucidate mechanisms for sodium dependent MR activation in patients with PA and non-PA.

Effect of spironolactone treatment in patients on LVM and in patients with and without PA at baseline, 3 and 6 months

Abstract 6 Table 1

	Primary Aldosteronism				Non-Primary Aldosteronism			
	LVM (g/m2)		IVS (mm)		LVM (g/m2)		IVS (mm)	
	UNa<200 (n=13)	UNa≥200 (n=7)	UNa<200 (n=13)	UNa≥200 (n=7)	UNa<200 (n=5)	UNa≥200 (n=9)	UNa<200 (n=5)	UNa≥200 (n=9)
Baseline	170.2	175.8	12.4	11.0	158.3	205.1	11.6	13.4
Difference between baseline, 3, and 6 month visits after addition of spironolactone								
Baseline to 3 months	−34.8	−16.0*	−1.5	0.1	−7.0	−33.2*	−0.4	−0.7
Baseline to 6 months	−52.0	−25.0*	−1.4	0.5	−19.8	−40.5*	1.2	−1.4

* denotes statistical significance p<0.05

7 INCREASING EFFECTS OF AGE ON ALL CAUSE MORTALITY IN PATIENTS WITH LEFT ANTERIOR DESCENDING INTERVENTION

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10.1136/jim-2015-000035.7

Purpose of Study Cardiologists are frequently ask to consider interventions in patients who might be excluded from randomized controlled trials because of age or other comorbidities. The purpose of this study was to compare the incidence of all cause mortality over time in patients 70 years of age or older with younger patients with left anterior descending disease as the duration of followup increases. The hypothesis is that including patients with a factor such as increased age will change the outcome because of time-dependent risks.

Methods Used Patients in a large medical system were studied for left anterior descending angioplasty, with adherence to standard guidelines. Patient followup for the study was completed using a computerized medical record system that included data from other hospitals within the system. No patient was excluded because of renal disease or diabetes. 100 patients stratified by age 70 or older were followed for ten years and all cause mortality compared for patients at one, five, and ten years.

Summary of Results (1)Cumulative all cause mortality was compared at 1, 5, and 10 years in 71 patients with a mean age of 58.4 years (standard deviation 7.38) and 29 patients with a mean age of 75.5 years (standard deviation 4.04). (2) At one year both groups had an increase in all cause mortality shown by ratios as 3/68 for the younger group and a higher number in the older group 6/23 ($p< 0.05$) (3) At the 5 year comparison mortality had increased to 14/55 in the younger group, but was almost 50% of the older group 13/15 ($P=0.013$). (4)The 10 year analysis showed the all cause mortality to be 22/40 in patients<70 years old, but had increased to over 50% with 17 deaths and 11 survivors in the older patient group.($p=0.038$).

Conclusions (1) The study shows the effect of a time-dependent covariate on all cause mortality in patients studied for left anterior descending disease. (2) It is probable that multiple factors of this type are present that result in inactions of age with hypertension, renal disease, and metabolic factors. (3) Studies in a larger population may help to define this type of risk so that the patient may be better informed about the expected outcome of interventions when high risk features are present.

8 DEPRESSION AS A PREDICTOR OF UNINTENTIONAL, BUT NOT INTENTIONAL, NONADHERENCE TO ANTIHYPERTENSIVE MEDICATION: A LONGITUDINAL ANALYSIS AMONG OLDER ADULTS

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10.1136/jim-2015-000035.8

Purpose of Study The association between depression and nonadherence to antihypertensive medications has been demonstrated. Less is known about the association between depression and intentional and unintentional nonadherence. We examined associations between depressive symptoms and intentional and unintentional nonadherence to antihypertensive medications using data from the Cohort Study of Medication Adherence among Older Adults (CoSMO).

Methods Used Intentional nonadherence was defined as an affirmative response to at least one of two items in the 8-item Morisky Medication Adherence Scale (MMAS-8): having cut back or stopped taking medication "because you felt worse when you took it", or "when you feel like your health is good". Unintentional nonadherence was defined as an affirmative response to either of the two MMAS-8 items related to forgetfulness. Depressive symptoms were defined as a score ≥16 on the Center for Epidemiologic Studies Depression Scale. For those with no intentional/unintentional nonadherence at baseline (n=1777 and n=1288, respectively, out of n=1906), separate logistic regressions tested associations between incident depressive symptoms and incident intentional/unintentional nonadherence at 2-year follow-up, while adjusting for demographics, social support, and comorbidity.

Summary of Results The sample was 58.5% female and 30.1% black, with a mean age of 74.9. The incidence of intentional and unintentional nonadherence at follow-up was 3.3% and 14.0%, respectively, while the incidence of depressive symptoms was 6.9%. After multivariable adjustment, incident depressive symptoms was associated with incident unintentional (OR (95% CI)=1.96 (1.13, 3.39), $p<0.05$), but not intentional (OR (95% CI)=1.56 (0.65, 3.74)), nonadherence.

Conclusions In a sample of older adults, depressive symptoms were associated with unintentional, but not intentional, nonadherence.

9 PARATHYROID HORMONE. A SYSTEMIC MARKER OF DECOMPENSATED HEART FAILURE IRRESPECTIVE OF EJECTION FRACTION

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10.1136/jim-2015-000035.9

Purpose of Study Secondary hyperparathyroidism (SHPT) is associated with various cardiovascular diseases and is a predictor of cardiovascular mortality. In this context, SHPT is a component of the systemic illness congestive heart failure with reduced ejection fraction (HFrEF). Proposed pathophysiological mechanisms include chronic RAAS activation with aldosteronism and loop diuretic usage, each of which increase calcium excretion, and vitamin D deficiency. Collectively, these pathophysiologic disorders result in reduced serum ionized calcium, a stimulus to parathyroid hormone (PTH) secretion. Herein, we aimed to investigate the presence or absence of SHPT in patients hospitalized with decompensated heart failure (NYHA functional class IV) having HFrEF or HF preserved EF (HFpEF) and whether PTH would be a marker of decompensation independent of ejection fraction.

Methods Used Twenty-eight consecutive patients (54.5 ±2.8 yrs; 39% men; 61% African-American), who had been receiving outpatient furosemide, and who were hospitalized with decompensated heart failure of several weeks duration were analyzed. Admission values were examined: serum parathyroid hormone (PTH); brain natriuretic peptide (BNP); left ventricular ejection fraction; and serum 25 hydroxy D (25OHD), creatinine (Cr), calcium, magnesium and phosphorus.

Summary of Results Data are presented in table (mean ±SEM). No differences were found in Ca^{2+}, Mg^{2+}, Cr or phosphorus between groups. An abnormal increase in parathyroid hormone (>65 pg/mL) and BNP (>100 pg/mL) were found, irrespective of ejection fraction, in all patients in whom hypovitaminosis D (<30 ng/mL) was prevalent.

Conclusions Elevated PTH is associated with decompensated heart failure irrespective of ejection fraction. SHPT is therefore a pathophysiologic component of both HFrEF

Abstract 9 Table 1

	PTH	BNP	25OHD
HFpEF	165.7±51.0	1369.1±383.4	21.2±2.5
HFrEF	89.7±13.0	1057.6±174.6	18.6±1.5

and HFpEF with abnormal elevations in plasma PTH, a systemic marker of decompensated heart failure.

10 PREPARTICIPATION SCREENING OF YOUNG ATHLETES; A LOCAL STUDY

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10.1136/jim-2015-000035.10

Purpose of Study The persistently controversial question of screening EKGs in young athletes has been raised repeatedly, largely by virtue of reported reduction in mortality rates of competitive athletes reported by the Italian Veneto Study, that reported an alluring 90% reduction in mortality rate. Despite these studies, the AHA has issued a scientific statement September 2014 against mandatory EKG for pre-participation screening and universal mass screening of young healthy people that continues to be controversial. The purpose of this study was to determine if pre-participation screening of athletes with a strategy including resting electrocardiography (ECG) is an effective screening tool to identify young athletes at risk of sudden cardiac death .

Methods Used A prospective study of 572 high school students was performed between September 2014 and July 2015. Screenings were performed by the Heart for Athletes program, a branch of Parent Heart Group, which consisted of volunteers, a pediatric cardiologist, and a certified echocardiography (Echo) technician. The screenings consisted of cardiac history, physical exam and a resting ECG. The second tier study was a limited Echo. The rates of abnormal ECGs were determined.

Summary of Results Of the 572 students that were screened, 40 students (7%) had abnormal ECGs requiring further evaluation with an Echo and follow up visits with the cardiologist. 32.5% of those reported symptoms or relevant family history prior to testing. Of the abnormal ECGs, 10.5% resulted in withdrawal from athletic activity, surgical intervention or further cardiac imaging such cardiac MRI.

Conclusions ECG screening of U.S. high school students in the Southern region of Alabama, on a volunteer, community based effort is an economically feasible method for screening physically active young athletes in association with comprehensive history and physical exam, given the ability to detect electrical/structural disorders that would otherwise go undetected, as well as the potential to fulfill community based goals. The ethics of screening only young athletes remain debatable and are the subject of further study.

Adult Clinical Case Symposium
11:45 AM
Thursday, February 18, 2016

11 A FATAL ERROR OF EARLY OMISSION: UNTREATED LATENT TB LEADS TO CNS LESIONS

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10.1136/jim-2015-000035.11

Case Report A spry 85yo man with a history of HTN and CAD was camping with friends when suddenly he could not speak, his face drooped to the left, and he started jerking. He had no recent illness and no fever, trauma, or weight loss by report. Initial differential was largely between stroke and seizure, but the head CT showed a right anterior cerebral artery infarct vs. neoplasm. TPA was excluded due to being outside the time window as well as the possibility of neoplasm. MRI showed four ring enhancing lesions of the right frontal cortex with vasogenic edema. Because of his age, metastatic disease was suspected, but CT of the chest and abdomen as well as colonoscopy and other serologic w/u were all negative. Neurosurgery was consulted, and a parietal lesion was excised. Pathology showed non-caseating granulomas and rare AFB. The diagnosis of CNS mycobacterial disease, or tuberculoma, was made, and the patient was started on INH, rifampin, pyrazinamide, and moxifloxacin. He tolerated rx well initially but developed sepsis due to UTI and aspiration pneumonia and later died.

Discussion Although TB is largely considered a disease of developing countries, in 2013 there were 9582 new cases of TB in the USA. Our case was unusual since only 1% of these cases involved the CNS. Tuberculoma more typically presents in a child or young adult with seizures or headache without systemic symptoms. Our patient had a family history of TB in his father and said he was told he had "dormant TB" but was never treated. His only immunosuppressive issue was his age. Culture of his brain lesion revealed pansensitive MTB. Treatment of tuberculoma is as noted above with ethambutol excluded due to poor penetration of the CNS. Phase I is 2 months of 4 medications followed by an extended phase II of just INH and rifampin to 18 months. Steroids are considered if initial response is poor. In the past, the elderly were not offered treatment of latent TB, but it is now standard to do so to prevent reactivation disease. Physicians need to consider tuberculoma in the differential diagnosis of mass lesions in the elderly, as early diagnosis and treatment can reduce the morbidity and mortality in these cases.

12 RENAL ARTERIAL ANEURYSM INVOLVING 4TH ORDER BRANCHE OF POSTERIOR SEGMENTAL ARTERY: A RARE CAUSE OF PERSISTENT HEMATURIA

MT Janjua, R Colombo. *GRU Health, Augusta, GA*

10.1136/jim-2015-000035.12

Case Report A 58 yo woman with sickle cell trait, cerebral palsy, and tobacco dependence presented with lightheadedness, fatigue, dyspnea, palpitations, and exertional chest pain. She reported a 3 year history of constant painless gross hematuria complicated by severe anemia requiring multiple blood transfusions. It was diagnosed as ureteral stones by her outside hospital urologist and ureteral stents x3 were placed that were later removed. She denied dysuria, flank pain, urinary urgency or frequency, incontinence, or other bleeding stigmata. Exam was remarkable only for mild tachycardia, a II/VI systolic ejection murmur, and baseline head dystonia. Laboratory studies revealed iron deficiency anemia with hemoglobin 5.9, hematocrit 19 and ferritin 4. WBC and Plt counts were within normal

limits, as were coagulation studies, renal function, and electrolytes. Urinalysis was remarkable only for too numerous to count RBC's and proteinuria; there was no evidence of infection, crystals, or dysmporphic red cells. Renal ultrasound showed mild bilateral hydronephrosis and some debris in the bladder. Computerized tomography showed no evidence of suspicious masses or stones. Cystoscopy revealed bloody efflux from the right ureteric orifice, found to be originating from middle calyces on Ureteroscopy; no tumors were seen in the bladder, ureter, or renal collecting system. A subselective renal arteriogram identified an aneurysm involving the 4th order branches of posterior segmental arterial distribution near the junction of the interpolar and lower polar region. The interpole aneurysm was successfully embolized using microcoils. The patient tolerated the procedure well with improvement in her hematuria and anemia.

Discussion Ureteroarterial fistulas are a rare, potentially life-threatening cause of hematuria characterized by an abnormal channel between a ureter and artery. A careful angiographic evaluation can prove both diagnostic and curative. Given the rarity of this condition and the potential for intermittent symptom presentation a high degree of clinical suspicion is necessary to make a rapid diagnosis. Thus we seek to heighten awareness of this uncommon condition in order to facilitate more prompt recognition and treatment.

13 HIV-ASSOCIATED THROMBOTIC MICROANGIOPATHY – IS THIS A CLINICALLY DISTINCT ENTITY FROM THROMBOTIC THROMBOCYTOPENIC PURPURA?

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10.1136/jim-2015-000035.13

Case Report A 28 year old transgendered female with recently diagnosed, treatment-niave HIV presented with new-onset seizures. She had dense oral candidiasis and bilateral cervical adenopathy. She had bilateral breast buds, but intact male genitalia. Mentation was slowed. She was afebrile. Biochemistry revealed creatinine of 2.17 mg/dL and GFR 44 mL/min from an unknown baseline. She also had a normocytic anemia of 6.7 g/dL and thrombocytopenia of 126 K. Blood smear showed many schistocytes. LDH was elevated at 630, Haptoglobin was <10 and D-dimer was 1.26. INR was normal. The reticulocyte count was 5% and immature platelet fraction was 6.9. Urinalysis revealed 2RBCs and 100 mg protein. CD4 count was 3, and viral load 214 K. Hematology was consulted and had a low suspicion for TTP, given ADAMTS13 activity was >100. Nephrology was also consulted and additional evaluation including hepatitis panel, ANA, serum and urine protein electrophoresis and RPR was negative. Renal ultrasound demonstrated increased parenchymal echogenicity bilaterally. A 24 hr collection revealed 1.65 g proteinuria. Renal biopsy confirmed HIV associated nephropathy with features of thrombotic microangiopathy. The patient was discharged to follow-up with Infectious Disease to commence anti-retroviral therapy. Insurance issues posed difficulties and she presented in status epilepticus and required intermittent dialysis. Thrombotic microangiopathy has been used as an umbrella term for microvascular thrombosis due to a variety of systemic diseases, including TTP/HUS, disseminated intravascular coagulation and connective tissue disease. Idiopathic TTP is characterized by the pentad of thrombocytopenia, microangiopathic hemolytic anemia, neurologic manifestations, renal impairment and fever. The current standard of care is daily plasma exchange. It has been postulated that idiopathic TTP is characterized by a severe reduction in ADAMTS13 activity and the detection of an inhibitor. HIV patients are frequently thrombocytopenic with concomitant schistocytosis. HIV TTP is also not often associated with severe ADAMTS13 deficiency. Treatment of the underlying HIV infection seems to form the cornerstone in managing this variant of TMA.

14 SEVERE HYPERTRIGLYCERIDEMIA A RARE CAUSE OF ORGANIC BRAIN SYNDROME AND LABORATORY ARTIFACT

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10.1136/jim-2015-000035.14

Case Report Elevated triglycerides are a risk factor for acute pancreatitis and increase the long term risk for cardiovascular and cerebrovascular events. But the role of severe hypertriglyceridemia as an independent risk factor in acute ischemic cerebrovascular events remains to be established. We present the case of a 61 years old obese man with the history of hypertriglyceridemia, who presented with sudden onset left hemiparasis. Physical exam was significant for elevated blood pressure 193/101 mm Hg, facial asymmetry with drooping of the left corner of the mouth and decreased sensation to touch and motor strength of 3/5 with hyperreflexia on the left side of the body. Laboratory workup was significant for Na+- 127 mEq/dL, K+ 5.7 mEq/dL, Bicarb 6 mEq/dL, glucose 231 mg/dL, BUN 28 mg/dL, creatinine 1.3 mg/dL in a lipemic specimen which showed triglycerides (TG) of >5250 mg/dL [See Figure 1]. Subsequently ABG showed pH of 7.37, pCO 2 of 38 mmHg and pO2 of 82 mmHg. Other blood work including CBC, lactic acid, amylase and lipase was unremarkable. Imaging studies - CT head, MRI brain, cervical and intracranial CT angiography were inconclusive. Based on the above studies a diagnosis of organic brain syndrome secondary to severe hypertriglyceridemia (sHTG) was considered. The patient was prophylactically started on intravenous heparin until he received two sessions of therapeutic plasma exchange (TPE) with complete resolution of his symptoms. Repeat TG levels subsequently were reduced to 475 mg/dL. The etiology of the sudden increase in triglyceride level remained unclear. Neurologic symptoms were felt in this case to be a manifestation of blood rheology changes associated with HTG, literature supports emergent therapy to lower TG levels with TPE is imperative to prevent irreversible neurologic damage. The observed blood pH and measured serum bicarbonate were not compatible with each other, indicating severe

measurement artifact from extremely high TG level. Thus, techniques like direct ion-selective electrodes or ultracentrifuge are required to prepare severely lipemic samples for meaningful interpretation.

15 ANTINEUTROPHIL CYTOPLASMIC ANTIBODY CRESCENTIC ALLOGRAFT GLOMERULONEPHRITIS AFTER SOFOSBUVIR THERAPY

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10.1136/jim-2015-000035.15

Purpose of Study Sofosbuvir is used for the treatment of hepatitis C virus (HCV) infection. Here, we report the first case of ANCA vasculitis and RPGN following sofosbuvir administration in a kidney transplant recipient.

Methods Used -

Summary of Results 51y WM with ESRD 2/2 hypertension had HCV infection (treatment naïve) likely due to remote history of IVDU. He had a LUDKTx with Campath and steroids for induction, and FK and MFA maintenance. His serum creatinine (sCr) nadir was 1.4 post transplant. @ 3 months, sCr was 2.0- biopsy showed ATN and tubular isometric vacuolization. FK was replaced with CSa. sCr stabilized at 1.6. Pre-kidney tx liver biopsy revealed stage 0 fibrosis, however 32 weeks after kidney transplantation, with AST 47 & ALT 63, liver biopsy revealed HCV changes. At week 40 post transplant, he was started with ribavirin and sofosbuvir. @ 10 weeks of HCV treatment, he developed anemia that required PRBC's, despite high dose of EPO treatment. @ 12 weeks of HCV treatment, the sCr was 3.7. UA had 30 protein and 131 RBCs, and PCR was 0.6. Allograft biopsy was+for TMA. Viral PCR's were negative. Tox and DSA's negative. Sofosbuvir, ribavirin, and Csa were discontinued. He was started on PDN and MFA. sCr @ 2.4. For spontaneously resolved hemoptysis, BAL biopsy (neg) done @ outside hospital. 30 weeks after sofosbuvir, sCr was 4.3 and PCR of 5. UA with >500 protein, 70 RBCs. Biopsy showed cellular crescents in glomeruli with pauci-immune IF staining. p-ANCA 1:320 and MPO >100. Viral & DSA's & C3/4 normal. p-ANCA crescentic GN in the transplanted allograft was noted. Despite treatment, he needed HD. Despite rituximab, he remains HD-dependent.

Conclusions ANCA-associated crescentic GN after sofosbuvir and ribavirin with pulmonary involvement is notable in this case. ANCA vasculitis has been reported after administration of PTU, hydralazine and cocaine. None of these drugs were used @ diagnosis. However, sofosbuvir &/or ribavirin are culprits. Ribavirin was approved in 1998. No reported case of ANCA vasculitis associated with Ribavirin yet in literature. Sofosbuvir was approved by FDA in 2013. As a new agent on the market, we suspect sofosbuvir as the likely cause. All previously reported cases of drug-associated ANCA GN were in native kidneys. This case also presents as a rarity of p-ANCA vasculitis in an allograft as pauci-immune crescentic GN.

16 SYSTEMIC INFLAMMATORY RESPONSE SYNDROME SECONDARY TO NITROFURANTOIN

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10.1136/jim-2015-000035.16

Case Report Nitrofurantoin is considered adequate treatment for acute uncomplicated cystitis by the Infectious Diseases Society of America, and is being increasingly recommended due to microbial resistance to trimethoprim-sulfamethoxazole and fluoroquinolones. We report a 58 yr old female with repeat episodes of systemic inflammatory response syndrome (SIRS) secondary to nitrofurantoin without evidence of systemic infection. The patient experienced urinary frequency and urgency and took nitrofurantoin prescribed by her primary care physician. In <24 hr, she developed abrupt onset of fever, chills, lightheadedness, chest congestion, pleuritic pain, and generalized weakness. Blood pressure was 90/51 mmHg (baseline 130/80 mmHg), temperature 101.7 Fahrenheit, and oxygen saturations at 96% on room air. She required 3 L of normal saline to stabilize her blood pressure. Blood and urine cultures were drawn, and she was given 1 gm of Rocephin IV and Zofran 4 mg IV. White blood cell count 17.1 K with 83% segs and 9 bands. Metabolic panel was only remarkable for potassium of 3.4 mEq/l and lactate was within normal limits. Urinalysis showed 2+ blood, trace leukocyte esterase, 5–10 WBCs, 0–4 RBCs, and 1+ bacteria. She was discharged on Levaquin for suspected acute pyelonephritis. However, within 24 hr all symptoms improved. Blood and urine cultures were negative. Two months later she took two tablets of nitrofurantoin for urinary urgency and frequency and in <24 hr she experienced an identical reaction with fever (102.6 F), hypotension (80 mmHg, systolic) requiring 2 litres of normal saline, and leukocytosis (23.6 K) with negative blood and urine cultures. Again, the symptoms resolved within 24 hr following discontinuation of nitrofurantion (repeat WBC count 8.5 K). At this point the patient recognized the temporal association of the symptoms with administration of nitrofurantion. One prior case report described a similar type of SIRS reaction to nitrofurantoin. A drug reaction of this type could easily be mistaken for a new onset bacterial infection or worsening of a previous infection leading to additional and unnecessary antibiotics. A better understanding of the immunologic reactions to nitrofurantoin is needed in order to properly identify these drug reactions and avoid unnecessary tests and therapies.

17 A RARE CAUSE OF PLEURAL EFFUSIONS

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10.1136/jim-2015-000035.17

Case Report A 54 year old male with chronic kidney disease (on hemodialysis intermittently),diabetes mellitus and hepatitis C cirrhosis was admitted for syncope.He developed hypoxic respiratory failure requiring noninvasive

positive pressure ventilation. He also had bladder distension with 900cc of retained urine. Biochemistry showed wide anion gap metabolic acidosis with uremia.CXR showed cardiomegaly,pulmonary edema and bilateral pleural effusions.Echocardiogram showed ejection fraction EF 65–70%, moderate pericardial effusion and normal filling pressures.Thoracentesis revealed straw colored fluid which was transudative by Light's criteria with a pH of 7, glucose 95, LD 86, protein 2.7 and a fluid creatinine (3.46 mg/dL) greater than serum creatinine(3.17 mg/dL) which was consistent with a urinothorax.Pleural fluid culture was negative. Renal ultrasound showed bilateral parenchymal echogenicity with no hydronephrosis.CT scan showed prominence of the heart with bilateral pleural effusions,and interstitial edema. Hypoxia resolved after thoracentesis and mental status improved after hemodialysis. Urinothorax (UT) is a rare and often undiagnosed condition,defined as the presence of urine in the pleural cavity due to the retroperitoneal leakage of urine accumulation, known as urinoma, into the pleural space.UT usually presents in patients with obstructive uropathy and may occur following surgical procedures in the ureter or kidney. Its diagnosis requires a high degree of clinical suspicion since the respiratory symptoms tend to be absent or mild and the urological signs tend to dominate. However, UT may rarely present with severe and acute dyspnea as well,such as in our case.Pleural fluid is straw colored with the distinctive smell of urine,and it is usually revealed to be a transudate according to Light's criteria,with biochemical test characteristics of low glucose,low pH, elevated LDH level, and low protein concentration. The most important biochemical parameter though is the fluid creatinine-to-serum creatinine ratio which is higher than 1 and in most cases greater than 10.Physicians should include UT in their differential diagnosis of pleural effusions especially in patients with recent urinary tract disorders. In our case, however, the cause of the urinothorax remains unexplained.

18 A LIVER MASS IN A POST LIVER TRANSPLANT PATIENT

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10.1136/jim-2015-000035.18

Case Report Tuberculoma is a benign non-neoplastic mass caused by a localized tuberculosis infection. We report a case of Primary hepatic tuberculoma in patient post liver transplant. A 63-year-old male with history of liver cirrhosis secondary to chronic Hepatitis C infection who underwent liver transplant 4 years ago presented to clinic with intractable hiccups, nausea and vomiting. He reported dry cough, subjective fever and fatigue a few months earlier and was treated for community acquired pneumonia. He denied a history of recent travel. Liver protocol CT of the abdomen showed a 5.2×4.8 cm right lobe liver mass with surrounding peripheral hypodense rim as well as cirrhosis of the liver. MRI of the liver showed a 5.4×4.7 cm mass with mild enhancement within the lesion. Findings were worrisome for hepatocellular carcinoma. Percutaneous biopsy of the liver mass showed focal granulomatous inflammation amid marked acute and chronic inflammation and fibrovascular granulation tissue. No malignancy was seen. AFB stains for mycobacteria and GMS stain for fungus were negative. Culture for mycobacteria was negative. Quantiferon-TB test returned positive. The decision was made to treat for possible extra-pulmonary TB. The patient had marked improvement in his symptoms after initiation of anti-TB therapy. CT after 6 months of therapy showed decrease in the size of liver mass. Tuberculosis of the liver is an uncommon form of extrapulmonary tuberculosis and it is rare to present in the absence of military TB. Liver transplant recipients have increase in prevalence of tuberculosis infection. Diagnosis of TB of liver somewhat difficult. The rate of accurate pretreatment diagnosis by guided percutaneous liver biopsy has been reported to be low, and the presence of tubercle bacilli in the biopsy sample is rarely reported. Thus, the reliability of needle biopsy as a diagnostic method seems uncertain. The demonstration of granulomas on liver biopsy remains the most sensitive diagnostic procedure; however clinicians should be aware of the possibility of tuberculous infection in all patients who are immunocompromised. Hepatic tuberculosis is treated like any other extrapulmonary tuberculosis. Patients usually respond well to anti-TB chemotherapy, alone and the overall prognosis is good.

19 AN UNUSUAL PRESENTATION OF DIABETES MELLITUS AND WEIGHT GAIN

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10.1136/jim-2015-000035.19

Case Report Diabetes is a chronic disease in which there is high levels glucose in the blood. We present a case of newly diagnosed diabetes. A previously healthy 63 y/o woman presented with one month history of profound fatigue, muscle weakness requiring a wheel chair, unexplained weight gain about 15 pounds and excessive thirst with polyuria. Her examination remarkable for HTN, bilateral lower extremity edema. Initial lab remarkable for hypokalemia, hyperglycemia, metabolic alkalosis. Both renin activity and aldosterone are normal. Further work up showed very high levels of Serum cortisol 158.4 mcg/dl, and Serum ACTH 176 pg/ml, and low FSH and LH. Overnight dexamethasone suppression test showed no suppression. MRI of brain revealed small pituitary gland with a right 3 mm nodule. PET/CT scan done to rule out ectopic and showed metabolically inactive 1 cm lung nodule. Bilateral inferior petrosal sinus sampling (BIPSS) was positive. Since this patient has the presentation of ectopic Cushing despite positive MRI and BIPSS, our clinical decision was to remove the nodule first before any pituitary surgery. Histological and immunhistochemical diagnosis was typical of bronchial carcinoid with ACTH-production. Postoperatively, abnormal endocrine data normalized along with improvement of diabetes. Cushing's syndrome is a rare disease with an incidence ranging from 0.7 to 2.4 per million people per year. Ectopic Cushing's syndrome (EAS) represents 5–10% of all reported cases of Cushing's; it presents with ACTH levels higher than 15–20 ng/dl and lack of cortisol response to high dose

dexamethasone. PET/ CT scan for detection of the ectopic ACTH source has a sensitivity of 64% and positive predictive values of 53 %. Bilateral inferior petrosal sinus sampling (BIPSS) plus CRH stimulation test is the gold standard for the diagnosing Cushing's disease, with a sensitivity and specificity of 97% and 100% respectively. False-positive IPSS results have been reported in 6 cases with EAS similar to ours. In summary, we present a case of Cushing's syndrome with clinical presentation suggestive of EAS. However both BIPSS plus CRH test and a pituitary MRI where compatible with Cushing's disease (CD). Further studies proved that patient had a lung carcinoid responsible for ectopic ACTH-dependent Cushing's syndrome.

20 PHENYTOIN ASSOCIATED DRUG REACTION WITH EOSINOPHILIA AND SYSTEMIC SYMPTOMS

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10.1136/jim-2015-000035.20

Case Report Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS) is a rare life threatening Type IV hypersensitivity reaction which presents 4–6 weeks (wks) post culprit drug exposure. Around 47 drugs have been reported with aromatic antiepileptics, antiretrovirals and allopurinol being the mostly commonly associated drugs. It classically presents with hematologic abnormalities (like eosinophilia,atypical lymphocytosis, thrombocytopenia) and clinical features of fever, leukocytosis, rash, lymphadenopathy and multi-organ dysfunction. DRESS is a diagnosis of exclusion and scoring systems like RegiSCAR have been published to classify the disease probability. We report an interesting case of phenytoin induced DRESS 4 wks post phenytoin start date who was diagnosed and managed at our hospital. A 33-year old male with a history of seizure disorder presented with 3 day history of fever, global erythroderma, skin desquamation, tender lymphadenopathy and facial swelling, 4 wks after phenytoin start date. Initial labs showed WBC- 6000/mcL, eosinophilia (12.2%),CPK -1104 U/L, hemoglobin-11.2 g/dl, platelet count- 94000/mcL, LDH-532 U/L and AST-51 U/L. CT Imaging was negative except generalized lymphadenopathy involving bilateral inguinal and axillar aspects. All tests for possible infections(blood cultures, urine cultures, TB, hepatitis panel, EBV, HIV, CMV, Parvovirus) were negative except HHV-6, which was positive. The tests for auto- antibody screening (ANA, anti-dsDNA, anti-scl70, anti-centromere) were also negative. The skin biopsy showed intra-epidermal eosinophil infiltration and spongiosis. Based on findings RegiSCAR score was 7; definite DRESS. From Day1, phenytoin was discontinued, levetiracetam was started along with 60 mg oral prednisone. Over the next three days, patients' clinical and laboratories abnormalities resolved. The patient was discharged on oral steroids (for next 8 weeks with gradual taper), levetiracetam,education about phenytoin avoidance and follow up appointment in outpatient clinic. CONCLUSION: DRESS is a potentially fatal rare drug reaction and prognosis is dependent on early recognition of clinical features and diagnosis for favorable outcomes. The use of high dose oral steroid therapy along with prompt discontinuation of the culprit drug is essential.

21 VENTRAL POST-TRAUMATIC PSEUDOLIPOMA IN A SURFER

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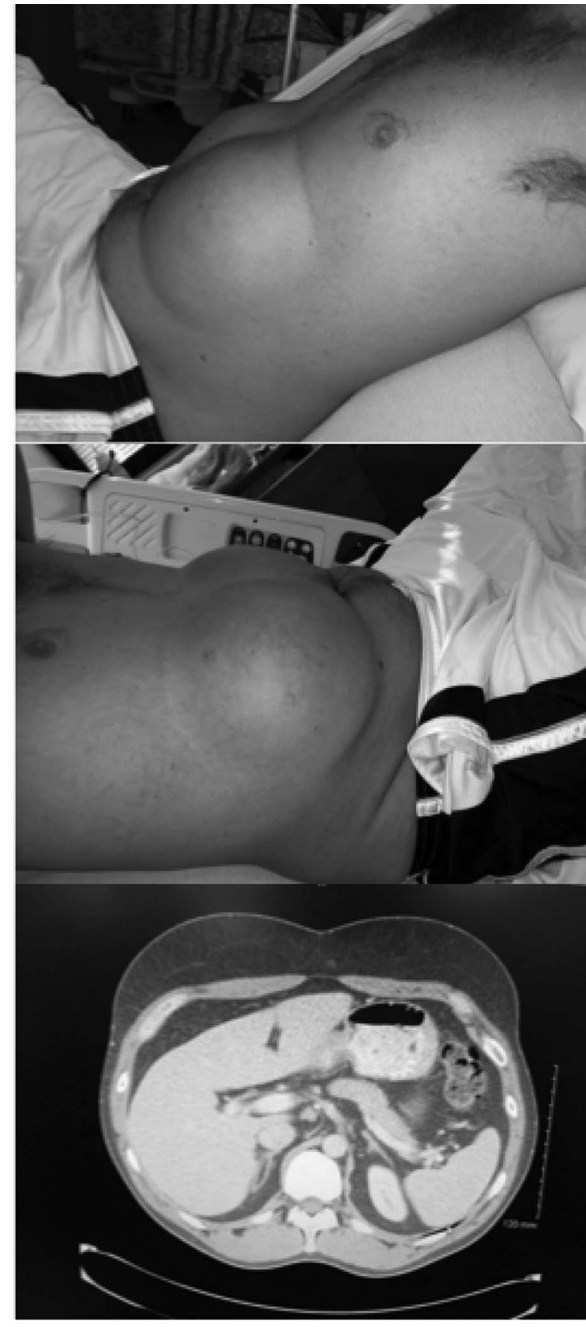
10.1136/jim-2015-000035.21

Case Report A 31-year-old Caucasian male, who is a professional surfer, presented to hospital with a calcaneal



Abstract 21 Figure 1 Photographs of the patient demonstrating abnormal anterior abdominal subcutaneous fat deposition alongside

fracture with an incidental complaint of progressive anterior abdominal swelling over the past 4 years. He related this swelling to recurrent surfboard trauma to his lower chest and upper abdomen over the years, and noted a remote history of traumatic ecchymoses prior to onset of swelling. Apart from cosmetic concerns, the patient was asymptomatic. He had no significant medical history, no over the counter medications or supplements and no history of subcutaneous injections in that area previously. Magnetic resonance imaging (MRI) revealed non-encapsulated subcutaneous fat deposition. Pseudolipomas have been described as lipomas that do not constitute a surrounding capsule on MRI. Post-traumatic Pseudolipomas (PTLs) are less well defined in the literature and tend to occur in areas subjected to acute or even chronic blunt trauma. Per the literature, PTLs are commonly seen in females and affect the buttock, thigh, and pelvic regions. The secondary inflammation from blunt trauma has been postulated to cause neo-adipogenesis. Treatment is optional since the growth is benign and procedures are done usually for cosmetic purposes. Removal may be performed by surgical excision or more frequently, by liposuction in order to minimize scarring.

Pediatric Clinical Case Symposium
11:45 AM
Thursday, February 18, 2016

22 A CASE OF PREMATURE THELARCHE SECONDARY TO APPLICATION OF LAVENDER LOTION

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10.1136/jim-2015-000035.22

Case Report: Background Exogenous estrogen exposure is one of the major causes for premature thelarche (PT). Lavender with its anti-androgenic and pro-estrogenic properties has been reported to be associated with development of PT. However, caution for the development of PT is rarely mentioned on Lavender containing products.
Objective To create awareness in pediatricians about the association between lavender containing products and PT.
Case description A 12-month-old African American female infant was referred to the endocrinology clinic at University of South Alabama for evaluation of premature bilateral breast development. Infant was born at term, with a normal newborn course. Mother reported gradual and symmetrical enlargement of both breast buds, starting at 6 months of age. Mother reports no breast discharge, vaginal bleeding, body odor, or acne. On further questioning, mother reported that she had been applying Johnson and Johnson lavender lotion on the child for almost 8 months. On examination, bilateral, Tanner stage 3, breasts with prepubertal nipples were noted. Breast tissue was firm and rubbery. Genital examination showed tanner stage 1 pubic hair with no signs of vaginal estrogenization. Rest of the physical examination was normal. On laboratory evaluation, TSH, Free T4 were normal, and LH, FSH, Estradiol were at prepubertal levels. Bone age was advanced to 6 months more than the chronological age. A diagnosis of exogenous estrogen exposure from the application lavender lotion was made after ruling out other potential causes. Mother was asked to stop lavender lotion application.
Results At her follow up visit after 8 months, Physical examination revealed soft fatty breast tissue that was no longer stimulated, and was starting to regress.
Conclusion Pediatricians should be aware that the contents of the products available for babies such as body soaps, lotions, and hair products may be harmful. They need to explore exposure to estrogenic substances, such as lavender, in children presenting with PT. This is a diagnosis of exclusion, after other causes of early puberty have been ruled out.

23 ALTERED MENTAL STATUS IN A PATIENT WITH HGB SS SECONDARY TO HEPATIC SEQUESTRATION

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10.1136/jim-2015-000035.23

Case Report Patient is a 15 year old with HbSS who presented to an outside hospital with vaso-occlusive crisis in her chest, back, and legs that required aggressive narcotic administration. Due to persistent pain, she was changed to a PCA pump. During the night, she developed altered mental status and was given 4 doses of narcan before she became responsive. Her labs demonstrated a marked drop in Hemoglobin (From 8.1 to 4.8 g/dL). She then transferred to the PICU of a large Children's Hospital for pheresis and evaluation of stroke. Prior to transfer, she received a single PRBC transfusion and Computed Topography of Brain which was normal. On arrival to the PICU, she had normal mentation and in discussion with blood bank, only one of the 6 units available for pheresis was compatible. Therefore, based on a normal CT and normal exam, it was decided to perform a simple transfusion and transfer the patient to the Hematology Service. On transfer, it was noted that she had hepatomegaly and laboratory abnormalities of Hb 7.1, AST 191, ALT 54, Bili 3.3, PT 21. An US of abdomen confirmed hepatomegaly with a liver measurement of 19 cm, 2 standard deviations above the normal for her age. Her work-up for other causes of hepatomegaly were negative including EBV, CMV, Hepatitis, Parvovirus, GGT testing. Over the course of one week, her pain improved and her hemoglobin returned to her baseline as well as her coagulation markers. As the patient was on appropriate dosing of Morphine for her age, it is difficult to determine if her altered mental status was due alone to Morphine as compared to a synergistic effect of the acute drop in hemoglobin. While a rare presentation, abdominal pain should prompt an appropriate abdominal examination and consideration of hepatic sequestration and exchange transfusion.
Methods used PUBMED Literature search for "altered mental status and hgb ss and hepatic sequestration" AND "hgb ss and hepatic sequestration" AND "hemoglobin ss and hepatic sequestration" AND "hepatic sequestration and altered mental status."
Conclusions This patient stay in the hospital was presumably longer because her hepatic sequestration was not noticed at first. In theory, she could have benefited from an

exchange transfusion which may have shortened her hospital stay and decreased any long term hepatic damage from the sickling.

24 ATYPICAL CASE OF GASTROENTERITIS: A 7YO WITH TYPHOID FEVER

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10.1136/jim-2015-000035.24

Case Report The CDC estimates that over 48 million Americans suffer from food poisoning each year. Food-borne Salmonella illness hospitalizes more patients than any other cause. The majority of cases are non-typhoidal, but there are 200–300 cases of *Salmonella typhi* reported in the United States annually. Of these patients, 80% have travelled to endemic areas. While both infections typically present with gastroenteritis, it is important to differentiate the two. Non-typhoidal Salmonella usually self-resolves within one week, and fever may not be present. Prolonged fevers are common, though, in cases of typhoid fever, and the illness can last up to a month. If left untreated, *Salmonella typhi* can lead to significant complications such as ileal perforation or sepsis. A ten day course of a 3rd-generation cephalosporin, fluoroquinolone, or azithromycin is usually curative. We present a 7 year-old Middle Eastern male with twelve days of fever to 104, emesis, non-bloody diarrhea, sore throat, and fatigue. He was severely dehydrated on initial exam with sunken eyes and tachycardia. He had 2+ erythematous tonsils but no notable lymphadenopathy. There was hepatosplenomegaly, with his spleen more significantly enlarged at 4 cm below the costal margin. His labs showed a WBC count of 10,000 with 27% bands, elevated ESR (32) and CRP (17.8 mg/dL), and a positive monospot. Initial blood and urine cultures were negative. The patient's high fevers and feeding intolerance persisted, and stool cultures from the day of admission were positive for Salmonella. The patient was started on oral Amoxicillin but showed no clinical improvement, so he was transitioned to IV ceftriaxone. A third blood culture drawn on hospital day 5 was positive for Salmonella species, ultimately identified as *S. typhi*. Ciprofloxacin was added to the treatment regimen, and the patient eventually improved. He completed 14 days of parenteral antibiotics. The family later admitted to traveling to Pakistan a month prior to presentation. Although typhoid fever is a common diagnosis world-wide, it is less frequently seen in the United States. It should, however, remain part of the differential—especially in patients who have traveled to endemic areas—as the treatment course differs from non-typhoid Salmonella and consequences can be dire.

25 HYPERVITAMINOSIS D CAUSING HYPERCALCEMIC CRISIS IN AN INFANT – A CASE REPORT

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10.1136/jim-2015-000035.25

Case Report Vitamin D toxicity, also known as Hypervitaminosis D, although rare, may occur in infants, mostly related to excessive vitamin D supplementation. Symptoms of hypervitaminosis D are mainly due to hypercalcemia, which can range from being asymptomatic to presenting with polyuria, polydipsia, vomiting, nephrocalcinosis, and even seizures and coma. In this report we describe a case of a 10-week old male infant who presented with vomiting and dehydration. He was found to have severe hypercalcemia (serum Calcium 15.1 mg/L, iCa2+ 2.1 mmol/L) due to excessive Vitamin D supplementation (Vit D, 25 Hydroxy 680 ng/ml). He is solely breastfed and vitamin D was recommended by his primary care provider, and prescribed and dispensed by his chiropractor. Error in the dosing of vitamin D and erroneous administration by patient's mother resulted in the infant receiving at least 10,000 IU of Vitamin D3 (25 times the recommended dose for breastfed infants of 400 IU) for two weeks. We also report the clinical course and the role of inpatient treatment with intravenous hydration, Furosemide, Calcitonin and Prednisone in the normalization of calcium level. Long-term outpatient management and outcome is also discussed. This study highlights two significant aspects of clinical practice. The first is the importance of communication of multiple providers, understanding by the parent/guardian of treatment instructions, and medication reconciliation by the primary care physician on health maintenance of children. The second is the clinical correlation between vitamin D toxicity, hypercalcemia and clinical symptoms. This might give some insight on the safety of vitamin D supplementation, and the need for monitoring of any child on vitamin D supplementation, especially breastfed infants.

26 DELIRIUM WITH VISUAL HALLUCINATIONS IN AN 11-YEAR-OLD FEMALE RECEIVING TREATMENT WITH LINEZOLID

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10.1136/jim-2015-000035.26

Case Report Linezolid is a weak reversible, non-selective MAO inhibitor. This drug tends to increase the synaptic concentrations of benign amines. There is a known risk for serotonin syndrome when used concomitant with proserotonergic drugs or agents which reduce linezolid's metabolism. Recent case reports in adults with delirium or hallucinations without any other clinical signs of serotonin syndrome were attributed to a side effect of this antibiotic alone or in combination with diphenhydramine. It has been hypothesized that linezolid may induce hyperdopaminergia.

Case An 11 year old Caucasian female who presented with a 5 day history of recurrent episodes of incessant vivid visual hallucinations associated with paranoia, muscular tension, and dextroversion. The patient had a history of recurrent osteomyelitis of the right foot treated with linezolid and rifampin by IV route for 2 weeks, followed by oral

route for 11 days. Six days prior to her admission she experienced upper airway congestion and was treated with oral diphenhydramine after which she developed severe hallucinations. She was transfered to our hospital and upon admission all of her prior medications were discontinued. Initial laboratory exams revealed normal electrolytes, glucose, liver function test, C-reactive protein, lactic acid, and creatinine kinase. Urine drug screen was positive for benzodiazepines, which was attributed to the recent use of lorazepam as an anxiolytic therapy. Her blood count showed mild normocytic normochromic anemia, mild leukopenia and moderate thrombocytopenia. Coagulation studies were normal. CT and MRI of the brain did not evidence any associated pathology. Her 24 hour EEG was normal. Without any other interventions the patient's hallucinations resolved 48 hr after the discontinuation of linezolid and diphenhydramine, and her thrombocytopenia also reverted.

Conclusion We suggest that the thrombocytopenia and hallucinations experienced by our patient were possibly associated with the administration of linezolid. Furthermore, the co-administration of linezolid and diphenhydramine may have played a role in the exacerbation of her psychiatric symptoms. To our knowledge this is the first report in a pediatric patient describing the potential for this association.

27 WHEN CELLULITIS IS ACTUALLY SUBCUTANEOUS PANNICULITIS-LIKE T-CELL LYMPHOMA

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10.1136/jim-2015-000035.27

Case Report Cellulitis with associated induration, tenderness, and erythema is a common clinical diagnosis in general pediatrics. We present a case of what presented as typical cellulitis but turned out to be a diagnosis far from this. A 2 year old male was hospitalized with extensively indurated cellulitis of the right forearm and thigh. He had right axillary and inguinal lymphadenopathy and fever after failing oral antibiotics. Despite appropriate parenteral antibiotics, no clinical improvement was noted. He then developed hepatosplenomegaly, neutropenia and anemia. Bone marrow aspirate and biopsy revealed mild hemophagocytosis. This prompted further evaluation for hemophagocytic lymphohystiocytosis including skin and lymph node biopsy. Results of the skin biopsy indicated the diagnosis of subcutaneous panniculitis-like T-cell lymphoma (SPTCL), a mature T-cell lymphoma of extranodal cutaneous origin. This typically presents as focal nodules or plaques on the extremities, trunk, or face with associated fever, lymphadenopathy, hepatosplenomegaly, cytopenias, and rarely hemophagocytosis. This is an extremely rare diagnosis in children for which there is no defined epidemiologic incidence and no organized treatment approach. Currently, treatment modalities include steroids, immunosuppressive agents, multi-agent chemotherapy and even autologous stem cell transplant. The current 5 year median survival is 80%, but this depends greatly upon the phenotype of the T cell receptor (TCR). The αβ phenotype has a significantly better prognosis than the aggressive γδ phenotype which is often associated with hemophagocytosis. Our patient's TCR phenotype studies are currently pending, but he has documented hemophagocytosis. Due to the concern for the more aggressive phenotype, we have begun treatment with a multi-agent chemotherapy regimen consisting of doxorubicin, vincristine, prednisone and cyclophosphamide. There is near resolution in the size and induration of his cellulitic areas after receiving the first two cycles. This case stresses the importance of broadening your differential diagnosis when a patient does not respond to appropriate treatment and further, will provide much needed insight as to how to successfully treat pediatric patients with the rare diagnosis of SPTCL and associated hemophagocytosis.

28 ALTERED MENTAL STATUS IN A 5 YEAR OLD

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10.1136/jim-2015-000035.28

Case Report Altered mental status in children presenting to the emergency department provokes a wide range of differential diagnoses. This differential includes anything from sepsis to non-accidental trauma to ingestion and must be considered in the initial work-up and management of patients with this presentation. This patient was a 4-year 11-month old previously healthy male when he presented to the emergency department with altered mental status. Per caregiver, patient was in his usual state of health until approximately 1 hour prior to presentation. The patient had multiple episodes of non-bloody, non-bilious emesis and then became difficult to arouse. His mother denied any known trauma or ingestions but reported unknown anti-hypertensive medications in the home. During the initial assessment, patient was noted to be hypothermic (93.9 degrees F rectally), mildly hypertensive, withdrawing to pain but not localizing or having purposefully eye movements. The rest of his exam was notable for pupils 2–3 millimeters and reactive bilaterally, benign abdomen, no obvious deformities and cool skin. Given concern for his inability to protect his airway, he was intubated. Initial work-up demonstrated mild leukocytosis with lymphocytic predominance, lactic acidosis, hypokalemia and hyperglycemia. Also, blood and urine cultures were obtained and patient was given a dose of both Vancomycin and Ceftriaxone. CT head scan without contrast was negative for any acute intra-cranial process. EKG demonstrated normal sinus rhythm. Patient was admitted to the pediatric ICU for further management and work-up of his altered mental status. He later was found to have ethanol ingestion with his alcohol level being elevated at 142 (normal <10). Following admission, he was quickly able to be extubated, returned to his neurologic baseline, and discharged home. This case illustrates the importance of maintaining a broad differential when assessing a child in the acute setting for altered mental status. Despite this patient's presentation lacking hypoglycemia, seizure activity, and nystagmus the etiology of his altered mental status was acute ethanol ingestion; therefore it should be considered in children

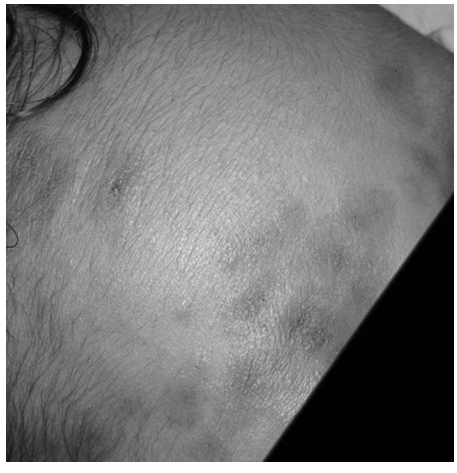
presenting with any combination of the above signs, symptoms and/or laboratory findings.

29 ALL IN THE FAMILY: ERYTHEMA MULTIFORME IN A NEONATE

MN Frascogna, B Dillard, P Redmond. *University of Mississippi Medical Center, Jackson, MS*

10.1136/jim-2015-000035.29

Case Report Erythema multiforme (EM) is an acute, immune mediated rash which commonly occurs with infections and drug exposures. EM is most commonly seen in the young adult population, and herpes simplex virus (HSV) is the most common infectious cause. We report a case of EM in an otherwise well-appearing, healthy neonate. A four week old African American female presented to the pediatric emergency department (PED) with complaint of a rash. The patient's mother reported that over the last five days she had noted the appearance of what appeared to be 'insect bites' on her infant, first appearing over the right eyebrow and spreading to include the forehead, ears, scalp, back, and sparsely over the extremities. The rash did not appear to bother the child. The baby appeared well and had been afebrile. Initial differential diagnosis included erythema multiforme precipitated by a herpes simplex virus (HSV) infection, other infection, or medication exposure. Due to a questionable apneic spell while in the PED, a sepsis evaluation was performed and the patient was admitted. Broad spectrum antibiotics and acyclovir were started empirically with culture results pending. Laboratory evaluation, including routine cerebrospinal fluid studies and HSV polymerase chain reaction all returned normal. Dermatology was consulted. Further laboratory evaluation revealed positive serum ANA, Anti-Smith, Anti-Ro and Anti-La antibodies. A diagnosis of neonatal lupus was made.



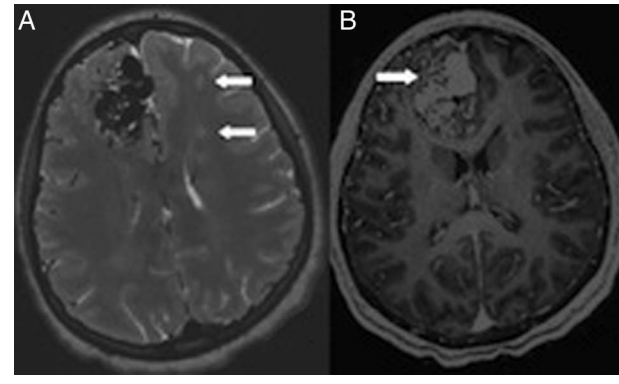
Abstract 29 Figure 1

30 A WRONGFULLY DIAGNOSED 14 YEAR OLD GIRL, A CONGENITAL MALFORMATION, AND A DEVASTATING UNDERLYING DISEASE

JJ Sarandria,[1] C Dudek,[3] E Viorritto,[1] C Shah[2]. *[1]Nemours Childrens Clinic, Jacksonville, FL; [2]Nemours Specialty Clinic, Jacksonville, FL; [3]University of Florida Pediatric Residency, Jacksonville, FL*

10.1136/jim-2015-000035.30

Case Report Pediatric multiple sclerosis (MS) represents a rare condition. Although absolute numbers remain unclear, it appears that an onset before age 16 occurs in 2.2 to 10% of all MS cases. (1) However, the difficulty in identifying initial MS attacks during childhood lies in their diverse and mostly mono-symptomatic presentation, ranging from sensory impairment to motor dysfunction such as tremor, dysmetria or internuclear ophthalmoplegia. (2) Encephalopathy as a presenting symptom, as seen in this case, has been described in only 16% of these pediatric MS cases. (3) A 14-year-old female with a 2 month history of schizophrenia and tic disorder presented with acute encephalopathy. Her evaluation revealed multiple brain and spinal lesions consistent with MS, which was confirmed on repeat imaging. A coincidental large right frontal arteriovernous malformation (AVM) was also discovered. The psychiatric symptoms were thought to be secondary to the MS lesions in the left frontal lobe, rather than the AVM occupying the right side. The case highlights the importance of a proper physical exam and the large differential diagnosis in the presentation of altered mental status, even when a psychiatric diagnosis is being considered.



Abstract 30 Figure 1 MRI Brain (Image A) shows multiple flow voids in right frontal lobe on axial T2 image consistent with arterio-venous malformation. In addition, there are multiple hyperintense T2 signal areas (arrows) in the white matter bilaterally. Post-contrast axial MRI brain image (Image B) shows multiple tortuous enhancing vessels (arrow) in the right frontal lobe arteriovenous malformation

31 DIABETES CLINICAL INTERVENTIONS IMPROVE PATIENT OUTCOMES

K Headden,[1] K Lewis,[2] R Paulo,[2] D Bowlby[2]. *[1]Medical University of South Carolina, Charleston, SC, SC; [2]Medical University of South Carolina, Charleston, SC*

10.1136/jim-2015-000035.31

Purpose of Study Diabetic ketoacidosis (DKA) is an acute, life-threatening complication of diabetes. A previous study showed that in 2011, 33 pediatric patients with established Type I diabetes were admitted to the Medical University of South Carolina (MUSC) in DKA 52 times. There were 12 patients admitted in DKA more than once within a year. This population of patients consiste primarily of adolescent females with longstanding diabetes, poor glycemic control and psychological diagnoses. In response to these findings, a variety of clinical interventions were instituted to reduce the number of DKA admissions. These included a Diabetes Transition Program, a Diabetes Intensive Program, emphasis on mental health screening, and creating a Diabetes Care Coordinator position.

Methods Used An IRB-approved retrospective chart review was conducted. Data was collected on patients with established diabetes including clinical presentation at DKA admission, demographics, preceding diabetes management, glycemic control and psychological diagnoses.

Summary of Results The demographics of the DKA populations from 2011 and 2014 were similar with respect to age, gender, severity of DKA, and A1C at admission. There was a decrease in the overall number of DKA admissions from 2011 to 2014 from 52 to 34. There were only 4 patients with recurrent DKA admissions in 2014 as opposed to 12 patients in 2011. There was a statistically significant increase in the average number of clinic visits in the 12 months prior to admission in 2014 from 2.5±1.69 to 3.46±1.37 ($p=0.03$). The average time interval from recent clinic appointment to DKA decreased from 5.12 months to 3.11 months. Fewer patients admitted in DKA had a psychological diagnosis in 2014. More patients with Medicaid were admitted in 2014 in DKA than in 2011.

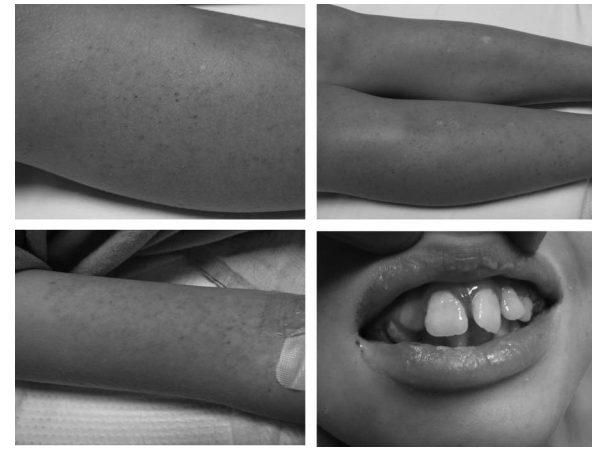
Conclusions There was a decrease in both overall DKA and recurrent DKA admissions. The number of outpatient clinic visits increased, and inpatient mental health screening was initiated. These findings suggest that our clinical interventions have shown improvement in patient outcomes. We plan to improve outpatient mental health screening and detection of financial barriers to care.

32 DO YOU C WHAT I C?

J Mulla, J Burhop, J DeBoer, C Heydarian. *The Children's Hospital of The King's Daughters, Norfolk, VA*

10.1136/jim-2015-000035.32

Case Report An 11 year-old boy initially presented to his pediatrician for sore throat and 1 month of leg pain. He was strep positive and treated. Over the next month, the leg pain worsened and he was evaluated by an ED, his PCP, and Ortho. X-rays were normal. The pain progressed despite NSAIDs and the patient presented to our tertiary children's hospital emergency department. T 36.4 C, HR 125, RR 32, BP 98/65, SpO2 100%, Wt 11%ile, Ht 4%ile. He was an autistic, non-toxic appearing child, with gingival hematomas, papular rash, petechia, tender bruised extremities, decreased range of motion and abnormal gait (Figure). Hgb 10.6 gm/dL, Hct 36%, ESR 48 mm/hr, CRP 1.4 mg/dL, ASO 200, PT 11.1 s, PTT 20.5 s. Urinalysis trace hematuria. Detailed inquiry revealed a 7 year history of a restrictive diet consisting of peanut butter sandwiches and cookies. He did not take a daily multivitamin. From the emergency department the child was started on ascorbic acid supplementation, 300 mg by mouth daily and monitored for resolution of symptoms after consultation with our hospitalist. After 2 days of oral replacement therapy, the patient experienced moderate improvement of arthralgias and mouth sores and was able to ambulate without gait abnormality. Petechial rash and ecchymosis of lower extremities faded. The patient was discharged with plan to continue 300 mg PO daily for 7 additional days and then transition to 100 mg daily for a month. He discontinued physical therapy 1 week after discharge due to resolution of symptoms. The patient was diagnosed with scurvy.



Abstract 32 Figure 1

Case Reports in Cardiovascular Medicine
2:00 PM
Thursday, February 18, 2016

33 INTRACRANIAL HEMORRHAGE CAUSING NEUROGENIC STRESS CARDIOMYOPATHY

X Solis, H Wang, T Nantsupawat. *TTUHSC, Lubbock, TX*

10.1136/jim-2015-000035.33

Background Acute left ventricular dysfunction associated with intracranial hemorrhage, ischemic stroke, and head trauma is a clinical entity known as neurogenic stress cardiomyopathy. The mechanism involves dysfunction of the amygdala and hippocampus, which promotes excitation of the medullary autonomic center and release of catecholamines. These hormones then bind to cardiac adrenoreceptors and induce toxicity in the myocardium, depressing cardiac function. Here we present a case of a young female with depressed right and left ventricular systolic function.

Case report A 17-year-old female presented with head injury after falling off a horse. On physical exam, she was

hypotensive, GCS of 6 with a fixed and dilated right pupil. CT head showed a right subdural hematoma with an 8.4 mm midline shift and a subarachnoid hemorrhage along the right sylvian fissure. ECG demonstrated sinus tachycardia with 0.5 mm upsloping ST depression. Troponin T was elevated at 0.48. TTE revealed LVEF of 25–30%, global hypokinesis and abnormal right ventricular systolic function. Cardiac index was 1.6 L/min/m2 with SVR of 1,887 dynes/sec/cm^5. The diagnosis of neurogenic stress cardiomyopathy with cardiogenic shock was made. Patient initially required vasopressors and intra-aortic balloon pump which finally was weaned off by day 7. Repeat TTE showed improved LVEF to 50–54%. Unfortunately, due to brain death and acute respiratory distress syndrome, the patient expired at day 9 after presentation.

Conclusion Recognition of neurogenic stress cardiomyopathy is important because this diagnosis has implications for management and prognosis. Diagnosis can be made among patient with intracranial hemorrhage who develop new LV dysfunction, an ejection fraction <40% and troponin T <2.8 ng/mL. Recovery of LV function can occur within several days. Treatment is generally supportive, with IVF and beta blockers. Left ventricular failure is usually supported by vasopressors and in extreme cases intra-aortic balloon pump. Right ventricular dysfunction can also occur in 30% of patients, which is associated with increased morbidity and mortality.

34 PARADOXICAL HEMODYNAMIC INSTABILITY AFTER PERICARDIAL WINDOW

T Slomka, AJ Han, A Mehrotra, L Murillo, S Alsafwah, RN Khouzam. *University of Tennessee Health Science Center, Memphis, TN*

10.1136/jim-2015-000035.34

Purpose Paradoxical hemodynamic instability (PHI), also termed postoperative low cardiac output syndrome, is a rare complication which appears following drainage of a pericardial effusion. PHI develops within hours post procedure and is unrelated to the method of drainage. It is observed more frequently in patients with malignant, large-volume effusions and following pericardiocentesis for cardiac tamponade. Responsible pathophysiologic mechanisms are not well understood. It has been hypothesized that the sudden increase in right ventricular preload, which follows pericardial fluid drainage, or decreased coronary flow resulting from large pericardial effusion may culminate in decreased myocardial contractility and right ventricular failure with reduced cardiac output. PHI is a poor prognostic factor and the majority of patients in whom it appears die soon after the diagnoses have been reached.

Case Report An 84-year-old woman without previous cardiac or cancer history presented with acute shortness of breath without jugular venous distention. Computed tomography (CT) excluded pulmonary embolism and echocardiography confirmed early tamponade with right ventricular free wall collapse. Following placement of an emergent pericardial window and removal of pericardial effusion, the patient developed hemodynamic instability and shock with subsequent multiorgan failure. Repeat echocardiography revealed left ventricular hypercontractility and right ventricular chamber dilatation with akinesis. Within hours after the pericardial window, the patient required maximal doses of multiple vasopressors and subsequently died.

Conclusions Paradoxical hemodynamic instability is a rare disorder of unknown etiologic origin involving new onset right or biventricular failure with cardiogenic shock. It resembles the hyperadrenergic stress cardiomyopathy of the left ventricle (Takotsubo). Further studies are needed to better understand the pathophysiology of PHI and to identify patients at risk and to identify preventative measures.

35 KISS OF SUDDEN CARDIAC DEATH

E Turse, LW Aldred, RD Ballard, JB Biglane, B Barksdale. *University of Mississippi Medical Center, Jackson, MS*

10.1136/jim-2015-000035.35

Case Report A 21-year-old male was found unresponsive and pulseless in his car. First responders began cardiopulmonary resuscitation. Shortly after emergency medical services arrived, he was successfully defibrillated for ventricular fibrillation. Return of spontaneous circulation was obtained, and he was transferred. On arrival he was negative for drugs/ethanol with normal electrolytes. Initial lab work showed an elevated troponin T of 2.19 ng/mL with an electrocardiogram (ECG) showing ST segment elevations in leads V1 & V2. Urgent coronary angiography showed normal coronaries. However, his left ventriculogram revealed an ejection fraction of 35% with anterolateral dyskinesis and posterobasal akinesis. He was admitted to the cardiac intensive care unit with presumed atypical Takotsubo cardiomyopathy. Moreover, his initial ECG was concerning for Brugada syndrome. This finding along with elevated C-reactive protein of 8.6 mg/dL, prompted cardiac magnetic resonance imaging (CMR) that showed findings consistent with myocarditis. Further history revealed that the patient had been diagnosed with infectious mononucleosis two weeks prior to admission. Labwork confirmed IgG and IgM antibodies to the viral capsid antigen of the Epstein-Barr virus (EBV). The patient's condition improved, and prior to discharge an implantable cardiac defibrillator was placed in the patient. The incidence and prevalence of myocarditis are unclear due to the large number of patients that manifest asymptomatically. When symptomatic, patients can present with a myriad of symptoms including chest pain, arrhythmias, heart failure, and sudden cardiac arrest/death. Myocarditis is estimated to have an incidence of 0–6% in infectious mononucleosis.[3,4] 6% of those with mononucleosis have ST-T abnormalities, however death from EBV is extremely rare.[5,6] The CMR combined with positive serologic testing helped to confirm this mercurial disease, which is challenging to diagnose and treat. There is still much to be learned about myocarditis and the role viruses play in the disease. However, early recognition and treatment with heart failure therapy remain the standard for managing these sick patients with several studies also suggesting that steroids may play some role.[4,7]

36 CHAGAS CARDIOMYOPATHY

LS Engel, L Roan, J Grant. *LSU Health Sciences Center, New Orleans, LA*

10.1136/jim-2015-000035.36

Introduction Delineating the etiology of cardiomyopathy is an important part of the initial workup of newly diagnosed cardiomyopathy. We describe the case of a 30 year old previously healthy male who presented with VF arrest and was found to have dilated cardiomyopathy

Case A 30 year old Hispanic Male with no prior past medical history presented to our institution post-resuscitation for ventricular fibrillation. Initial and subsequent EKGs were significant only for low voltage. Echocardiogram was significant for LV EF <20% with global hypokinesis, and LVID 7.0 cm. Computerized Tomography Scan protocoled for Cardiac structures revealed no atherosclerotic disease and normal origins of both left and right coronary arteries, and a LVEDD 7.6 cm. Evaluation of renal function, creatinine-kinase, hepatic function, iron studies, HIV, TSH, and urine toxicology were all unremarkable. Enzyme Linked Immunosorbent Assay for *Trypanosoma cruzi* IgG was positive, and subsequent testing by CDC confirmed the diagnosis. During his admission he received an ICD for secondary prevention. The patient remained asymptomatic from his cardiomyopathy.

Discussion The prevalence of *Trypanosoma cruzi* infection in South American is about 1%. *Trypanosoma cruzi* infection has two forms. Approximately 70–80% of infected have the indolent intermediate disease form characterized by chronic infection in the absence of signs or symptoms, and 20–30% of infected have Chagas cardiomyopathy, Chagas gastrointestinal disorder or both. Acute Chagas may be diagnosed with either microscopic examination of thin smears stained with Giemsa or PCR. Chronic infection relies on ELISA or Immunofluorescent Antibody Assay (IFA). Two assays are typically used for diagnosis, as no single assay has high enough sensitivity or specificity to be used alone as confirmation of diagnosis. Cardiac involvement can cause both dilated cardiomyopathy and arrhythmia. Treatment of chronic Chagas cardiomyopathy is controversial, with ongoing trials aimed at determining effectiveness. Although uncommon, changes in epidemiology will undoubtedly result in a greater incidence and prevalence of Chagas cardiomyopathy.

37 PERCUTANEOUS AORTIC VALVE CLOSURE WITH AN AMPLATZER SEPTAL OCCLUDER AS TREATMENT FOR SEVERE AORTIC INSUFFICIENCY AFTER LEFT VENTRICULAR ASSIST DEVICE (LVAD) IMPLANTATION

B Bennett, R Long, C Guild, M deShazo. *University of Mississippi, Jackson, MS*

10.1136/jim-2015-000035.37

Case Report LVADs are a rapidly evolving treatment for advanced heart failure or a bridge to the "gold standard," cardiac transplantation, providing electromechanical support for both short-term therapy and destination therapy. Given the rapid advancements and increasing indications for use, the learning curve for device complications and management is steep. A known complication of LVADs is the development of aortic insufficiency (AI). While most centers treat patients with more than mild AI with a Park stitch, valve replacement or a surgical patch at the time of implantation; the development of moderate to severe AI is reported to be as high as 33% at two years, with a sharper increase after three years. Unfortunately, many patients who develop severe AI are poor candidates for surgical correction. Therefore, the best course of management for these patients remains unclear. We present a 56 year-old female with non-ischemic cardiomyopathy as a result of breast cancer chemotherapy, who underwent implantation of a Heartmate II LVAD in 2012 due to progression of heart failure despite guideline-directed medical therapy as a bridge to cardiac transplantation. In late 2012, after LVAD placement, she was diagnosed with a second primary breast cancer and removed from the cardiac transplantation list. She developed severe AI in 2015 resulting in for heart failure requiring multiple hospital admissions and high dose/intensive diuresis. Multiple comorbidities and poor right ventricular function made her a poor candidate for surgical repair; therefore, other options were explored. The patient subsequently underwent successful percutaneous closure of the aortic valve orifice with a 25 mm Amplatzer Cribiform Septal Occluder with near complete resolution of AI and improved LVAD parameters. This case illustrates an often underappreciated complication of a new therapy for end-stage heart failure in a field with rapidly developing technology, and highlights the need for more research to identify patients who may be at higher risk for developing AI after LVAD implantation. This case also demonstrates the safety and efficacy of percutaneous treatment options in patients who are deemed too high risk for a repeat open surgical repair.

38 CHEMO-RADIATION AND CARDIAC VALVE DETERIORATION

C Baldeo,[1] A Hritani,[1] R Ali,[1] C Baldeo,[2] R Percy[1]. [1]*UF Jacksonville, Jacksonville, FL;* [2]*RCSI, Dublin, Ireland*

10.1136/jim-2015-000035.38

Case Report A 67year old woman with aortic valve replacement (in 2007 with Bovine valve) presented with malaise in October 2012.She was diagnosed with diffuse large B cell lymphoma in December 2011 and had R-CHOP chemotherapy (January–February 2012) and neck radiation (May 2012). On examination, a grade 4/6 systolic ejection murmur, heard best in the right upper sternal border radiating to the carotids was noted.CXR was normal. EKG showed ST segment depressions in the inferio-lateral leads.Serum Troponin T was elevated. Left heart catheterization was unremarkable.ECHO showed severe aortic stenosis, mean aortic valve gradient of 47 mmHg, aortic valve area of 0.7 cm^2 with normal left ventricular ejection fraction. There was a calcific right coronary cusp with restricted motion and severe aortic

regurgitation with peri-valvular leak. During aortic valve replacement surgery, a similar bovine prosthesis was used. Structural valve deterioration (SVD) is an uncommon complication of bioprosthetic aortic valves.It usually begins 7–8 years after porcine valves and 11–12 years after bovine pericardial (perimount) valves. We describe a female patient that had SVD only 4 years after implantation following chemotherapy and non-chest radiation therapy. The pathogenesis for early SVD has not been well described. Young age of implantation, lipid lowering drugs, prosthesis-patient mismatch and higher peak and mean gradient across the aortic valve after the operation, appear to be important factors in SVD. The etiology in which the valve deteriorates appears to be secondary to valve calcification. We hypothesize that the chemo-radiation therapy affected the valve since it was normal up until the treatment. The main concern with R-CHOP treatment is the cardiotoxicity associated with Doxorubicin.Our patient also received neck radiation for supraclavicular node metastasis. To our knowledge, this is the first case reported of SVD of a bioprosthetic valve after chemotherapy and radiation therapy. Chest shielding in our patient could have prevented this complication. Dexrazoxane could have also possibly reduced the risk of SVD.In conclusion, more studies are needed to investigate the risk of bio-prosthetic valve deterioration in patients exposed to radiation therapy and cardiotoxic chemotherapy.

39 DENGUE FEVER: A RARE ETIOLOGY OF LOW-PRESSURE CARDIAC TAMPONADE

AB Shah, A Mangla, Z Lasic, N Coplan. *Lenox Hill Hospital, New York, NY*

10.1136/jim-2015-000035.39

Case Report A 20 year-old female presented to the emergency room with four days of abdominal pain, nausea, emesis, chills, and one day of chest pain and dyspnea. She had been in Dominican Republic prior to presentation. Her past medical history was not significant. Her heart rate was 146 beats per minute, respiratory rate of 24, oral temperature of 99.4F, and blood pressure of 110/72 mmHg. Exam was significant for distant heart sounds and 1+ bilateral upper and lower extremity edema. Electrocardiogram showed sinus tachycardia, PR depression, diffuse ST elevation and low voltage consistent with pericarditis. Admission laboratory values were significant for elevated transaminases, troponin, creatine kinase, thrombocytopenia, leukocytosis, and hypoalbuminemia. Echocardiogram showed a globally reduced ejection fraction (30%) and moderate pericardial effusion with significant mitral inflow respiratory variation, an echocardiographic sign of cardiac tamponade. Right heart catheterization showed near equalization of diastolic pressures (RA 8, RV 9, PCWP 11) and Fick calculated cardiac index of 2.18 L/min/m2. When interpreted together with echocardiographic findings, the right heart catheterization results were consistent with low-pressure cardiac tamponade. A pericardiocentesis was done with the removal of 300 cc of serous fluid and right atrial pressure decreased to 4 mmHg. Due to low filling pressures and severe rhabdomyolysis, the patient was aggressively fluid resuscitated. The patient was managed supportively, and despite an initial decline in her status with hypotension requiring vasopressors and renal failure, she slowly recovered. The assays for IgM dengue virus returned positive (sent five days after onset of symptoms), and repeat testing at day 13 showed seroconversion of the IgG antibody confirming the diagnosis of dengue shock syndrome. All other serologies returned negative. At six weeks follow-up, the patient had resolution of all symptoms, and echocardiography showed a normal ejection fraction and minimal pericardial effusion. Low-pressure cardiac tamponade is a rare finding in dengue fever and has only been reported twice prior. This case highlights the importance of recognizing key features of rare diseases to help aid in diagnosis when a patient has an atypical presentation.

40 POSTERIOR FASCICULAR VENTRICULAR TACHYCARDIA STORM SENSITIVE ONLY TO BETA BLOCKERS

P Naji, L Bhatta, D Villarreal. *SUNY Upstate Medical University, Syracuse, NY*

10.1136/jim-2015-000035.40

Introduction Fascicular ventricular tachycardia (VT) is a subgroup of idiopathic VTs which generally occur in patients without structural heart disease and respond well to drug therapy. Posterior fascicular VT (PFVT) is the most common form. We present a rare case of PFVT storm resistant to verapamil and multiple antiarrhythmics and only sensitive to beta blockers.

Case A 48 year-old male presented to ER with dyspnea and feeling of "dying". Vital signs showed heart rate 190, blood pressure 96/63 mmHg. EKG showed regular wide complex tachycardia. He was given adenosine 6, 6 & 12 mg without success and was cardioverted to sinus rhythm but the VT recurred. He was given amiodarone 300 mg and cardiology was involved. With the diagnosis of PFVT based on EKG, he was given verapamil 5 mg x2 without success. He then received procainamide 1 g, magnesium 2 g, lidocaine 150 mg at spaced intervals without success. He became unstable and received cardioversion x2 (with early recurrence), lidocaine 75 mg and verapamil 5 mg x2. As most medications were getting maxed out, we gave metoprolol 5 mg x2 which broke the VT. All subsequent recurrences also responded to metoprolol. Patient was started on esmolol drip and breakthrough VTs were treated with metoprolol. VTs completely resolved after 3 days. On day 5, he underwent electrophysiology study and electromagnetic mapping confirming the diagnosis. Unfortunately, ablation was not successful despite multiple ablation sites. Patient was transitioned to oral metoprolol and received implantable defibrillator. At 9-month follow up, he's had occasional recurrences terminated by anti-tachycardia pacing.

Discussion PFVT is a reentry arrhythmia utilizing abnormal Purkinje fibers as antegrade arm and the left posterior fascicle as the retrograde arm. It depends on the slow entry of Calcium in partially depolarized Purkinje fibers hence responds to verapamil. Due to origination from the conduction system, it has shorter QRS duration (<150 ms) and initial forces (RS<80 ms) and may be misdiagnosed as

supraventricular tachycardia. Proper diagnosis is important as the treatment is different and highly successful. Our patient had a unique presentation with several atypical features which warrant revision of the role of beta blockers in optimal treatment of PFVT.

Moving Your Clinical Case Presentation into a Published Manuscript
2:45 PM
Thursday, February 18, 2016

41 SEVERE TSH ELEVATION AND PITUITARY ENLARGEMENT AFTER CHANGING THYROID REPLACEMENT TO COMPOUNDED THERAPY

AL Pappy, AG Ioachimescu. *Emory University, Atlanta, GA*

10.1136/jim-2015-000035.41

Objective To report a case of pituitary enlargement in the setting of compounded synthetic thyroid therapy

Case A 63-year-old woman with longstanding autoimmune hypothyroidism was taking levothyroxine (LT4) 175 μg/d. In 1/2015, despite normal TSH (0.6 μIU/mL, nl: 0.4–4.5), Free T4 (1.7, nl: 0.82–1.77 ng/dL) and Free T3 (2.3, nl: 2.00–4.40 pg/ml), she was switched to compounded T4/T3 (57/13.5 μg) in order to improve T3 level. In 2/2015, she developed fatigue and constipation. In 4/2015, TSH was 148 mIU/L and remained elevated 3 months later (147 μIU/mL) despite two increases in compounded thyroid dose to T4/T3 (76/18 μg/d). Patient became increasingly tired, gained weight and developed headaches and muscle cramps. CPK became elevated (400 U/L, nl: 26–140). In 5/2015, MRI showed pituitary enlargement, which prompted referral to our pituitary center. Exam showed weight 84 kg, BP 146/85, pulse 63, dry skin and normal visual fields upon confrontation. Pituitary panel was normal with the exception of thyroid tests. We reinitiated LT4 at a dose of 137 μg/d and patient reported progressive weight loss and resolution of symptoms. TSH and CPK normalized after 2 months (2.63 μIU/mL and 143 U/L respectively). MRI will be repeated in 1/2016.

Discussion Prior case reports have shown compounded thyroid preparations can cause thyrotoxicosis. In contrast, our case highlights occurrence of iatrogenic hypothyroidism, pituitary enlargement (likely due to thyrotroph cell hyperplasia), and elevated CPK. Our review of 13 randomized controlled trials comparing the efficacy of LT4 with compounded T4/T3 indicates conflicting results regarding clinical outcome and TSH changes. Compounded thyroid therapy has not been standardized among different pharmacies. Also, the optimal T4/T3 ratio has yet to be determined, and the long-term outcomes have not been elucidated.

Conclusion Primary hypothyroidism treatment should be gauged primarily by TSH levels. Iatrogenic hypothyroidism and pituitary hyperplasia can occur with compounded thyroid replacement. MRI abnormalities can be mistaken for a pituitary macroadenoma and lead to inappropriate surgical intervention. We support the current recommendations of the American Thyroid Association that recommends against routine use of compounded thyroid preparations.

42 MEDICAL MANAGEMENT OF BORDERLINE HYPERTROPHIC PYLORIC STENOSIS WITH ATROPINE THERAPY

S Bratcher, D Brown, S DeLeon. *The University of Oklahoma Health Sciences Center, Oklahoma City, OK*

10.1136/jim-2015-000035.42

Case Report Up until the late 1960's, infantile hypertrophic pyloric stenosis (IHPS) was managed medically by replacing electrolyte imbalances and administering low dose atropine. However, today it is more commonly treated with pyloromyotomy due to its high success and low mortality rate. We present a patient with borderline IHPS who was medically managed with low dose atropine therapy. Our patient is a previously healthy 2 month old infant male who was admitted for failure to thrive. He was receiving appropriate oral feeds but had severe emesis and was gaining only ~12 g/day. Basic lab work was normal outside of an elevated eosinophil count. He was changed to Elecare hydrolyzed formula due to concerns for milk protein allergy. An upper GI series showed an elongated pylorus and gastric emptying study was severely delayed. Serial pyloric ultrasounds showed a hypertrophic pylorus with borderline measurements that did not ever meet criteria for pyloric stenosis; because of the risks associated with surgical management in a borderline pylorus, he was not a candidate for pyloromyotomy and medical management was recommended. Based on published protocols, our patient was started on low dose atropine therapy, 0.01 mg/kg IV q4 h until emesis improved. He was then discharged on oral atropine 0.02 mg/kg q 4 hours to be weaned outpatient. In addition to atropine therapy, he was also started on continuous nasogastric feeds, with the thought that he would tolerate a smaller volume better. While on the atropine therapy, emesis gradually improved and the first pyloric ultrasound done after 7 days of therapy showed a reduction in size of the pylorus. Follow up pyloric ultrasounds done as an outpatient continue to show a decrease in pylorus size and freely flowing formula. The current accepted standard therapy for hypertrophic pyloric stenosis is pyloromyotomy, but as with any surgical procedure, there are risks, and those risks are magnified in a patient like ours with incomplete stenosis. Low dose atropine offers an alternative approach to those patients that are unsuitable or at high risk for surgery, but this approach is not widely known or used. This case demonstrates atropine can be successfully used in similar cases.

Adolescent Medicine and Pediatrics Joint Plenary Poster Session and Reception 4:00 PM Thursday, February 18, 2016

43 GENDER DIFFERENCES IN PREFERENCES FOR FEMALE SUPERHERO COSTUMES: MAKING THEM MORE RELATABLE TO FEMALE READERS

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Purpose of Study Male and female superhero costumes may appeal to adolescent males but alienate female readers and reinforce unrealistic gender stereotypes. This study evaluated whether redesigned female comic superheroine costumes would be appealing to adolescents and explored gender differences in that appeal.

Methods Used Middle- and High school students at 7 schools completed an anonymous online survey that assessed students' opinions on the costumes of 4 female superheroes. Participants viewed 3 versions of each costume: Current (sexualized, "impractical"), Alternate Past version (blend of sexualized and practical), and Redesigned (non-revealing, practical). Participants rated their familiarity with each character, then scored perceptions about the functionality of each costume and interest in purchasing a comic book about each character.

Summary of Results The 395 participants were majority female (61%); 78% white, 9% black, and<5% each of other races/ethnicities. 36% were in High School. The majority (>75%) were "familiar" or "somewhat familiar" with 2 of the characters, while the majority (>75%) were "somewhat unfamiliar" or "completely unfamiliar" with the 2 other characters. Participants rated the functionality of redesigned costumes higher (67%) than original costumes (33%, $p<0.001$, chi-square), and females (81%) were more likely than males (65%) to rate redesigned costumes as functional ($p<0.001$, chi-square). When asked whether they would purchase a comic with the specific costumes, males and females responded more favorably to redesigned costumes of the unfamiliar characters, with >50% replying "Yes" to the redesigned costumes of the unfamiliar characters, a proportion that reached>65% among female participants.

Conclusions A majority of participants favored the functionality of less sexualized, more practical costumes for female superheroes, and female participants especially preferred redesigned costumes of unfamiliar characters over current versions. Comic publishers should introduce new female characters with more functional costumes but may have difficulty altering costumes of established, more familiar characters.

44 EVALUATING THE FREQUENCY OF DIET AND EXERCISE COUNSELING AMONG OBESE CHILDREN AND ADOLESCENTS

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Purpose of Study To determine the frequency of receipt of counseling for diet and physical activity among a nationally-representative sample of subjects and to test the hypothesis that counselling increased over time.

Methods Used Subjects were 6–17 years old, drawn from Medical Expenditure Panel Surveys from 2002–2011. Two questions assessed whether subjects received either dietary or physical activity counselling from a provider in the past 12 months. We grouped subjects by "obese," "overweight," or "normal weight" using CDC criteria. Pearson's chi-square test, accounting for survey design, tested differences for receipt of counselling among weight classifications. Logistic regression evaluated predictors of receiving counselling, adjusting for year, age, gender, race/ethnicity, insurance type, metropolitan statistical area (MSA) inhabitation, region of the country, and a measure of poverty.

Summary of Results The sample included 39,065 subjects, with a population estimate of approximately 32.8 million. Across all years, subjects were more likely to receive both counselling modalities with increasing weight classification, at 33.1% for normal weight subjects, 37.7% for overweight subjects, and 45.3% for obese subjects ($p<0.01$). In logistic regression predicting receipt of either counselling modality, both overweight (aOR 1.2, 95% CI 1.12–1.28) and obese subjects (aOR 1.67, 95% CI 1.54–1.81) had greater odds of receiving counselling relative to normal-weight subjects, even after adjusting for covariates. Additional positive predictors of receiving either counselling modality were female gender (aOR 1.11), inhabiting a MSA (aOR 1.61), inhabiting Northeast region of the US, and being in highest income stratum (aOR 1.56). Being uninsured (aOR 0.71) was associated with a lower odds of counselling. The year-to-year odds of counselling for obese individuals varied from 18.2% to 20.9%, but no temporal pattern was evident.

Conclusions Fewer than 50% of the obese subjects in this sample recall receiving counselling for both diet and exercise each year. There has been little change in the percentage of subjects who receive either counselling modalities, even with pertinent national recommendations released in 2007 and 2010.

45 PARENTAL WILLINGNESS TO RECEIVE THE TDAP VACCINE TO PROTECT THEIR NEWBORNS

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10.1136/jim-2015-000035.45

Purpose of Study The primary sources of infant pertussis are household contacts such as parents, grandparents, and siblings. Immunizing parents and other household contacts with the Tdap vaccine will reduce transmission to their baby. Our objective is to assess Tdap vaccination rates of parents and adult caregivers of newborns, identify parents and adult caregiver candidates for Tdap vaccination and barriers to vaccination.
Methods Used A 2-page survey was administered to English speaking parents and/or caregivers presenting for newborn visits (within 2 to 14 days of life). A study team member offered the survey during the triage portion of the visit and assisted with completion and collection of the survey tool. Questions included whether the mother received the vaccine prenatally or post-partum, reasons they were not vaccinated, and about other caregivers' receipt or refusal of the shot. Information regarding the other children's vaccine status was collected. Completed survey tools were collected and placed into a locked office within the clinic. Data were entered into a Red Cap database, and descriptive statistics and frequencies were analyzed.
Summary of Results To date, we have received 20 responses, 95% of which were completed by the mother. 90% of mothers indicated they were given information about pertussis prevention during a prenatal visit and 75% received information after delivery. Prior to completing the survey, 85% of mothers had received a Tdap vaccination and one additional mother agreed to receiving Tdap at this visit. A majority of respondents (16 (80%)) reported that other caregivers in the home did not receive Tdap. Of those, 8 (50%) were not present in the hospital and 5 (31%) were not offered. Following the survey, 1 mother and 3 caregivers received Tdap at the visit. Likewise, 75% of mothers were interested in bringing other family members to be vaccinated.
Conclusions Most mothers were familiar with the Tdap vaccine and the majority received the vaccine prior to or immediately after delivery. Other adult contacts were not present or not offered Tdap in the prenatal or hospital setting. Most mothers were receptive to bringing other adult caregivers to the next visit or the outpatient pharmacy for vaccination.

46 ABUSIVE HEAD TRAUMA IN SPANISH LANGUAGE MEDICAL LITERATURE

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10.1136/jim-2015-000035.46

Purpose of Study Anecdotal experiences demonstrate that Abusive Head Trauma (AHT) is significantly underdiagnosed and perhaps poorly recognized in Latin American settings. This purpose of this study was to describe the scope of the available Spanish language medical literature pertaining to AHT. With increasing interest in international collaboration in pediatrics, differences in perspectives regarding complex diagnoses must be explored when potential blind spots are uncovered.
Methods Used In this review, LILACS, SciELO, (major Spanish language databases) and Pubmed were searched with appropriate terms and filters in English, Spanish, and Portuguese for Spanish language articles on AHT. Identified articles' reference lists were then examined for possible additional articles on AHT using the "snowball method". All relevant articles were sorted by country and examined for article type and content.
Summary of Results Thirty-four unique articles were located for review from 9 countries, with no correlation between article number and country population. Most of the articles identified were case reports, case series, or general information, indicating that AHT remains an underdiagnosed phenomenon in many countries. Additionally, some scientific information contained in the articles varied considerably from the evidence in the English language literature in the areas of etiology and preventive strategies. While studies from various countries referenced mandatory reporting, the literature of only one country (Costa Rica) referred to the existence of liability protection for physicians or others who report abuse.
Conclusions This survey highlights significantly different medical literature and perhaps differences in the legal milieu across countries that are associated with varying perspectives regarding this complex diagnosis. This must be considered when working collaboratively in a global setting. Additionally, identification of this gap presents an opportunity for education and productive information exchange among global medical communities.

47 PROPIONIC ACIDEMIA AND AUTISM: METABOLIC DYSREGULATION IN ACTION

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Purpose of Study While the determinants of autism are not fully understood, amino acid metabolism dysfunction has been reported in animal models to mimic autistic symptoms. Furthermore, amino acid levels in autistic patients have been reported as significantly different from non-autistic control groups. Inborn errors of metabolism such as propionic acidemia (PA) have been suggested to increase the risk for autism, though only one case of a patient with both PA and autism is reported. The aim of this evaluation of eight PA patients, six of whom exhibit autism, is to investigate whether the presence and severity of autism correlates with their clinical history or metabolic control.
Methods Used A review of the indicators that are used to monitor the course of propionic acidemia was preformed on eight patients treated from 1995 to present. These include levels of lactate, alanine, isoleucine, leucine, valine, methionine, ammonia, methylcitrate, and OH-propionate plus C3 acyl-carnitine; age of diagnosis; MRI changes; treatment history; and birth history. Patients were divided into groups based on autistic features (2/8 no autism, 3/8 mild autism, 3/8 severe autism). Clinical and metabolic values were evaluated for correlation with autistic features.
Summary of Results Of the factors evaluated in this study, two were found to correlate with presence of autistic features. The first is valine levels, which were normal in both non-autistic patients, and chronically low in four of six

autistic patients. The second is ammonia, which was normal in both non-autistic patients and elevated in five of six autistic patients.

Conclusions Six of eight propionic acidemia patients in this series exhibit autism, strengthening the correlation between these diseases. Given a population autism rate of approximately 0.005, the chance of this occurring with no connection with PA is 4.4×10^{-13}. Two metabolic factors that are known to impact neuropsychological outcome in PA patients (low valine and hyperammonemia) were correlated with autistic features in this cohort. We propose that patients diagnosed with PA should be screened for autism, and that metabolic dysregulation in propionic acidemia patients may be responsible for their increased risk for autism.

48 ELECTRONIC MEDICAL RECORDS: DATA IS NOT ALWAYS WHAT IT SEEMS

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10.1136/jim-2015-000035.48

Purpose of Study Administering timely antibiotics to patients with sickle-cell anemia presenting with fever is critical in the emergency department (ED) setting. To better understand, quantify, and improve time to antibiotics for this subset of patients in the ED, a quality improvement project was conducted.

Methods Used Retrospective data was collected from patient charts coded as sickle cell and fever seen in the Children's of Alabama ED over three separate periods. Data collected included time points of arrival time, time antibiotics were ordered, and time antibiotics were given. A new sickle-cell with fever ED patient-care pathway was instituted after the initial data collection period. During the study period a new electronic medical record (EMR) system was also launched. Disparate data input was identified. The addition of a nurse to our quality improvement team helped identify the issue as a nursing charting issue. Subsequent education about nurse charting in a new EMR was deployed and final data collection occurred after this intervention.

Summary of Results Initial analysis showed a decrease in time from triage to giving antibiotics of 20 minutes (min), from 102 min to 82 min. Further breakdown of the data showed time of order placement to time of antibiotics of 0.2 min. Time stamp comparison using an alternate method identified incorrect data. Corrected data (column C) showed a decrease of 5 minutes in time to antibiotics from 102 min to 97 min. Repeat analysis after nursing education in the new EMR is displayed in column D.

	A	B	C	D
	Codonix	Initial iConnect	Actual iConnect	Newest iConnect
Time (Minutes)	Jan-June 2013	Dec 2014-March2015	Dec 2014-March2015	July-August 2015
Arrival to Ordered	61	53	55	40
Ordered to Medication Administration	40	0.2	23	21
Arrival to Medication Administration	102	82	97	74

Abstract 48 Figure 1

Conclusions During the process we identified a separate issue of incorrect charting by nursing because of a change in the EMR system. This error became evident as we did data analysis. Initially encouraging results were not accurate and led to a shift in our project to one of nursing education on correct medication administration charting. It is critical for the researcher to understand the definition of data points especially during an EMR transition. It is also crucial for the researcher to understand the role of each staff member and how they preform charting within the EMR.

49 SOMETIMES HOOFBEATS REALLY ARE JUST HORSES

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10.1136/jim-2015-000035.49

Case Report Group A streptococcus (S. pyogenes) is known to cause invasive infections, but only a small percentage of patients with invasive group A strep infections present with pneumonia. We present a 15 yo male who was admitted to the PICU with cough, chest pain, hemoptysis, and acute respiratory distress but no recent fevers. His chest x-ray on admission demonstrated bilateral pulmonary infiltrates and effusions. He presented with an oxygen requirement, and ultimately required intubation and mechanical ventilation. He had a known history of solitary kidney secondary to MCKD, but with acute kidney injury on admission with a BUN of 64 mg/dL, creatinine 2.77 mg/dL, and urinalysis with 1+ protein and 2+ blood. Despite fluid resuscitation, he had minimal urine output for the first 48 hours with rising BUN (peak at 95 mg/dL) and creatinine (peak at 2.94). Bilateral chest tubes were placed due to the large effusions and drained serosanginous fluid. A CT scan of the chest showed bilateral loculated effusions, and he was treated with intrathoracic TPA to both sides. Repeat chest CT demonstrated persistent loculated fluid collections bilaterally. An additional 3 doses of TPA were given on the left, and the patient underwent VATS procedure on the right. He was successfully extubated after 16 days of mechanical ventilation. Infectious disease, nephrology, and pulmonology were all consulted, and the initial differential diagnosis was broad including Wegners, good pasture syndrome, and lupus. Pleural fluid, sputum, and blood cultures were negative as well as fungal cultures, AFB, and cytology. Throat culture for GAS was negative, and ANA, P-ANCA, and C-ANCA were also negative. Anti-GBM, anti-proteinase 3, and anti-myeloperoxidase were all negative. His streptozyme was checked on hospital day 3 and was positive at >200, and ASO was elevated at 962 U/mL. Complement levels were initially extremely low (C3 4 mg/dL), but were normal at discharge (C3 146 mg/dL) consistent with post-streptococcal acute glomerulonephritis (PSGN). His renal function improved during his hospital stay, and both BUN and creatinine were normal at the time of discharge. This is a case of untreated group A strep pharyngitis that resulted in complicated bilateral pneumonia that became symptomatic simultaneously with the patients PSGN.

50 DELAYED PRESENTATION OF CHOLEDOCHAL CYST

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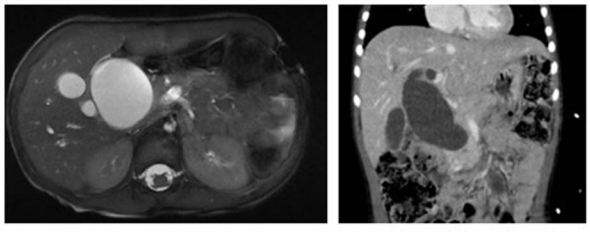
10.1136/jim-2015-000035.50

Case Report 2 year old previously healthy female presented with an 8-day history of abdominal pain. The pain was perceived as colicky and was associated with intermittent non-bilious non-bloody emesis for the first three days. The pain worsened, she developed "chalky" white stools, and on day five of illness the physical exam in the ED showed a fussy, uncomfortable child with a palpable smooth RUQ abdominal mass. The laboratory showed hyperbilirubinemia and elevation of the lipase consistent with pancreatitis. The ultrasound showed a large cystic structure within the liver and common bile duct dilation measuring 4 cm. The CT scan of the abdomen showed marked cystic dilation of the common bile duct and intrahepatic biliary ductal dilation. The MRCP also showed a dilated pancreatic duct measuring 3 mm and inferior displacement of the pancreas and duodenum by the cyst. The patient underwent laparoscopic duodenocholedochotomy for removal of the cyst. The microscopic evaluation confirmed the diagnosis of the suspected choledochal cyst measuring 2.0×3.0 cm. The incidence of congenital choledochal cyst in the United States is 1/150,000 births whereas the incidence in Japan is much greater. The classic triad of jaundice, abdominal pain and palpable right upper quadrant mass is seen in 25% of patients. Our patient exhibited all the classic cyst complications secondary to obstruction, including: pain, acholic stools, hyperbilirubinemia, and pancreatitis. The most feared sequela of a choledochal cyst is the formation of cholangiocarcinoma which occurs in approximately 10–30% of patients. Surgical removal decreases the incidence of malignant progression. The case also emphasizes the importance of a thorough physical examination and utility of ultrasound. Figure 1.



Abstract 50 Figure 1 MRCP and CTscan showing a large congenital choledochal cyst ~3.8 cm, and common bile duct dilation ~4 cm, respectively.

51 PREDICTORS OF OBTAINING AN ABDOMINAL RADIOGRAPH FOR PEDIATRIC CONSTIPATION

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10.1136/jim-2015-000035.51

Purpose of Study Evidence-based clinical guidelines endorsed by the American Academy of Pediatrics discourage the routine ordering of abdominal radiographs (AR) in the evaluation of pediatric constipation. Nonetheless, many children with constipation receive an AR. The objectives of this study were to identify factors associated with obtaining an AR and determine if obtaining AR was associated with a longer length of stay (LOS) among children treated for constipation in the Pediatric Emergency Department (PED).

Methods Used Administrative data were obtained from an academic tertiary care PED for children aged 0–17 years who were discharged or admitted with a primary diagnosis of constipation from July 2013-June 2014. Through this data and chart review, provider variables (e.g., provider types) and patient variables (e.g., symptoms, gender, age, insurance) were collected. Comparisons between those who received an AR and those who did not were conducted using chi-square and Fischer's exact test. Differences in LOS were analyzed using Student's t-test.

Summary of Results 331 children met inclusion criteria. Of those, 44% received an AR. Resident physicians (48%) were more likely than mid-level providers (32%) to order AR ($p=0.02$). The likelihood of receiving an AR increased with age – infants aged <1 years (0%), toddlers aged 1–4 years (33%), school-aged children aged 5–9 years (59%) and adolescents >10 years (69%) ($p=0.001$). Children with private insurance (60%) were more likely than Medicaid-insured children (37%) to have an AR ($p=0.004$). Children presenting history of with emesis (54% vs 41%) were more likely to receive AR ($p=0.03$). There was no difference in AR rate related to level of training of resident, gender of patient or identification of a primary care physician. The mean LOS for those without an AR was 155 minutes and for those with an AR was 193 minutes ($p=0.004$).

Conclusions Our study found frequent use of AR in the diagnosis of constipation with significant associations with patient and provider factors, ultimately leading to a significantly longer LOS. Further studies are needed to determine how these factors can be used to target interventions to decrease AR utilization in the management of constipation.

52 EMERGENCY DEPARTMENT UTILIZATION TRENDS BY MEDICAID RECIPIENTS IN WEST ALABAMA

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Purpose of Study With hospital emergency departments (EDs) serving as the only place for some within the U.S. healthcare system to receive medical care, EDs have, in many cases, supplanted family practice, internal medicine, and obstetrics and gynecology clinics as primary care clinics for many patients. Various factors, including ED proximity and chronic conditions with which a patient is affected contribute to a patient's decision about which healthcare provider to visit. The purpose of this study is to determine and describe the role each of these factors play in contributing to a patient's decision to visit an ED.

Methods Used A database containing over 50,000 records of ED visits over the course of one calendar year (July 2014-June 2015) by members of a primarily rural Medicaid patient care network covering West Alabama to

major EDs in West Alabama was reviewed. The database was downloaded to a Tableau workbook and records were reviewed and filtered to include only records containing geodata pertinent to the thirteen counties covered by the patient care network. The records were then plotted on a scatter plot comparing the overall number of visits per geodata location to distance from that location to the hospital visited with logarithmic trendlines calculated for the plot. Similar analysis was conducted for patients with select diagnoses (asthma, CHF, generalized pain complaints).

Summary of Results A negative correlation between distance to the ED (miles) and number of visits over the course of the year was found (p-value 0.0006659, n=34,345). This correlation is present when subdividing for certain diagnoses such as generalized pain (p=0.0381629) but not for others such as asthma and CHF.

Conclusions For this patient population, in the year studied, overall ED visits per patient increased as distances to the ED per patient decreased. This did not hold true for patients with certain chronic diseases which precipitated various emergencies. Mapping of individual visits demonstrated geographic clusters of various diagnoses, demonstrating geographical boundaries which may influence which hospital a patient visits. Understanding these trends in ED visits can guide targeted interventions to make health care more accessible to patients while refocusing ED resources on providing acute care to patients with emergent conditions.

53 PEDIATRIC TRAUMA AT THE UNIVERSITY OF MISSISSIPPI MEDICAL CENTER FROM 2007–2015

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10.1136/jim-2015-000035.53

Purpose of Study The objective of this study was to provide a description of trauma mechanisms, injury patterns, patient demographics and outcomes for children presenting to the University of Mississippi Medical Center with acute traumatic injuries during the study period.

Methods Used This retrospective study included all children aged 15 years or younger presenting to the University of Mississippi between January 2007 and May 2015. The following data points were reviewed using individual injury records from the University of Mississippi Institutional Trauma Registry: age, gender, location, external cause of injury (CDC E-code), nature of injury and disposition.

Summary of Results Among 8,754 children meeting inclusion criteria, the average age was 7.3 years, with two peaks at ages <1 (n=1,335) and 15 (n=635). 66% of children were from outside the surrounding metropolitan area. The most common external causes of injury were motor vehicle collisions (n=2,592, of which 691 were off road) and falls (n=2,389). The most common injury types were structural head injuries (n=1457), concussions (n=1344) and forearm fractures (n=980). 64% of patients were admitted to the hospital (n=5,523), 12% were admitted to the intensive care unit (n=1,012), and 6% went to the operating room from the emergency department (n=504). 33 patients (0.4%) died prior to disposition from the emergency department.

Conclusions Among pediatric victims of traumatic injuries who were seen at the University of Mississippi Medical Center during the study period, many were from outside the surrounding metropolitan area and the most common mechanism was motor vehicle collision followed by falls. Although hospitalization was frequently required, emergent operative intervention and intensive care requirement were uncommon. Among this group of patients who were not deceased prior to arrival, death in the emergency department was very uncommon.

54 VALIDITY OF A COMMUNITY-BASED SCREENING SURVEY FOR SAFE SLEEP ENVIRONMENT

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Purpose of Study We examined the validity of three sleep-safety questions on the Family Map (FM), a survey used by home visitors (HV) to screen for home risks and identify needed services.

Methods Used Participants were enrolled in Teen Thrive or Healthy Families America home visiting projects. HVs conducted the FM interview routinely. HVs were trained in sleep environment assessment using the FM and a simulation where mothers placed a doll in the baby's normal sleep location and position. Concordance between

Abstract 54 Table 1 Percent of Infants Observed or Identified with No risk on Three SIDS Prevention Level A recommendations

Level A Recommendations	Observed Safe	Family Map Question	Family Map Report Safe	Kappa	Correlation Coeffiicient, r	N
1. Back to sleep for every sleep	74.3%	Do you place your baby on his/her back to sleep at night or during naps?	82.9%	0.58**	0.60	35
2. Room-sharing without bed-sharing is recommended	81.0%	Do you co-sleep with your baby at night? (Reverse)	46.7%	036	0.47	30
3. Keep soft objects and loose bedding out of the crib	42.1%	Which of the following do you have in your home? Crib/Bed filled with soft bedding or lots of stuffed toys (Reverse)	76.8%	0.10	0.17	38

**P<0.05

observed behavior and FM sleep questions was assessed using Cohen's Kappa coefficient.

Summary of Results FM screens were matched to observations for 38 mothers with infants less than 6 months old. Participating mothers were 14–24 years old; 90% were primigravidas. For the 'back to sleep' question on the FM, concordance with observed behavior was acceptable (Kappa= 0.58). Co-sleeping responses had poor concordance; parents reported more risks on the FM than was observed. Parents underreported use of soft materials in the crib on the FM compared to observation. (Table 1)

Conclusions The Family Map had mixed results in its usefulness to identify SIDS risks. Refinement of the instrument and further study may lead to a tool that can be used for risk assessment and referral for additional services and education.

55 ASTHMA TREATMENT INNOVATION IN PEDIATRICS, A QUALITY IMPROVEMENT INTITIATIVE IN THE PEDIATRIC EMERGENCY DEPARTMENT

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Purpose of Study Pediatric asthma is a chronic disease associated with high morbidity and cost. As a result of the financial and patient burden, significant innovation has occurred in the treatment of acute asthma management through the use of integrated care pathways. Several studies have shown mixed data supporting integrated care pathways as decreasing length of stay and cost. In addition, the use of specialty asthma treatment units within the pediatric emergency department is becoming more common and data regarding their effectiveness is lacking. This study will evaluate the use of a pediatric emergency department-initiated integrated care pathway in combination with an asthma pod, along with several other points in time implementing new procedures or work flow, to determine the cumulative and individual effects on the care of the acute pediatric asthma patient.

Methods Used Data was extracted from the electronic medical record to include children aged 2–17 years of age with known asthma with current exacerbations presenting to the pediatric emergency department to study primary outcomes of time to nebs and steroids. Secondary measures include length of stay, cost, age and ethnicity. There were 5 time periods of interest, defined by epoch. Patients with additional diagnoses (e.g. pneumonia, foreign body, sinusitis, bronchiolitis, cystic fibrosis, sickle cell disease) were excluded.

Summary of Results Time to nebs remained steady across Epochs 1–3 but significantly decreased in Epochs 4 and 5. Time to steroids remained steady across Epochs 1–3 but decreased significantly in Epochs 4 and 5. See Tables 1 and 2.

Conclusions The use of an electronic medical record and a pediatric emergency department-initiated integrated care pathway has led to statistically significant decrease in time to nebs and steroids for our population of pediatric asthma patients.

56 HISTORY OF SEXUAL ABUSE AS A RISK FACTOR IN ADOLESCENT FEMALES WITH PSYCHOGENIC NONEPILEPTIC SEIZURES: A CASE SERIES

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Background Nonepileptic seizures are events that clinically resemble epileptic seizures but are not accompanied by the ictal electrical changes seen on electroencephalograms of patients with epilepsy. When related to underlying psychological stressors or conflict, the term psychogenic nonepileptic seizures (PNES) is preferred. In children and adolescents, multiple risk factors have been associated with the presence of PNES including school difficulties, family discord, and history of trauma. Almost half of adolescents presenting with PNES can have comorbid psychopathology such as depression and anxiety disorders.

Cases We describe the cases of five female adolescents from West Texas diagnosed with psychogenic non-epileptic seizures. Four out of five patients disclosed a history of sexual abuse either at the time of diagnosis or during subsequent follow-up visits. The only patient that did not disclose sexual abuse had significant history of family and life stressors. Three out of five patients had improvement or complete resolution of the nonepileptic seizure activity after the disclosure of sexual abuse. One of the four with history of sexual abuse was unsatisfied with the diagnosis of non-epileptic seizures and sought a second opinion while continuing anti-epileptic medication against medical advice.

Conclusion A history of sexual abuse was found in 80% of our patients with PNES, which is higher than previously reported (32% in children and adolescents, and up to 41% in adult women with PNES), and significantly higher than in the general adolescent population (1 in 4 girls in the United States are sexually abused before the age of 18 according to the Centers for Disease Control). Health care providers should be aware of the risk factors that predispose adolescents to developing PNES, and be comfortable communicating the nature of the disorder to patients and families in a nonjudgemental manner to prevent further delays in diagnosis, avoid unnecessary medical costs, and potential side effects from the use of unwarranted anti-epileptic drugs. Addressing the identified risk factors is crucial to prevent further nonepileptic seizure activity.

57 IMPROVEMENT IN DIABETES CONTROL AFTER ADDRESSING PSYCHOSOCIAL NEEDS IN A TRANSGENDER MALE ADOLESCENT

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Case Report: Background Sexual minority and gender variant youth, commonly referred as LGBT are at higher risk for bullying, abuse, non suicidal self-injury, suicidal ideation and attempts, and psychiatric comorbidities such as depression and anxiety than non LGBT youth. Parental

support is vital for social adjustment in this population. We present the case of a transgender male adolescent with uncontrolled type I diabetes mellitus (T1DM), history of traumatic events and psychiatric comorbidity, and his journey towards achieving diabetes control, and overall well-being with the help and support of his family and team of medical providers.

Case 16 year old transgender male with uncontrolled T1DM who presented to our pediatric endocrine clinic to establish care after moving from another state. His past medical history was significant for multiple episodes of diabetes ketoacidosis requiring hospital admissions until the age of 14. Psychosocial history revealed strong maternal support, reduced friend network, peer victimization, non suicidal self-injury since age 10, and depression with suicidal ideation following sexual assault by a family member at the age of 14. On initial visit, he received diabetic education, insulin pump adjustment, and a referral to a specialist in transgender medicine. He was diagnosed with depression, anxiety, and suspected PTSD by his new primary care doctor who prescribed Fluoxetine, and referred to Adolescent Medicine. After obtaining baseline hormonal work up, he was started on Depotestosterone 100 mg IM every other week. He continued following with a community therapist with experience in sexual abuse while waiting for full psychological evaluation by a team of experts in childhood trauma. Depression and anxiety symptoms significantly improved after 2 months on Fluoxetine and 1 month of initiating Depotestosterone shots. Hemoglobin A1C levels dropped from 14% on initial visit, to 11.9% at 3 months and 9.3% at 6 months.

Conclusion Strong family support, as well as addressing gender dysphoria, psychiatric comorbidities and history of abuse by a team of medical providers, resulted in significant improvement of diabetes control, depression and anxiety in this 16 year old transgender male adolescent.

58 POLAND SYNDROME IN A 17 YEAR OLD FEMALE WITH A HISTORY OF GASTROESOPHAGEAL REFLUX AND AUSTISM SPECTRUM DISORDER

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10.1136/jim-2015-000035.58

Case Report Poland Syndrome occurs in 1 in 30,000 live births and is characterized by partial or complete agenesis of the pectoral muscle. The disorder is most commonly unilateral and on the right side. It is associated with multiple chest wall abnormalities including anomalies of the ipsilateral chest wall muscles including the latissimus dorsi, ribs, breast tissue, and digits such as brachydactyly and syndactyly. We present a 17 year old female with a history of gastroesophageal reflux requiring high-dose cimetidine and autism spectrum disorder who presented to the adolescent clinic with concerns for breast asymmetry. Per history, thelarche occurred around 13 years with left breast greater than the right. At the clinic visit, an approximately 2 cup size difference was noted. As breast development and asymmetry progressed, her emotional distress worsened. Patient reports feeling stigmatized and socially isolated due to her breast asymmetry. On initial physical exam, right breast was notably smaller. No pectoralis major was palpated on the right in the supine position or with exercise of the chest wall. The left pectoralis muscle was palpated and appeared normal on exam. She had no limb or digit anomalies. Based on her physical exam, she was diagnosed with Poland syndrome. Treatment options were discussed including prosthesis versus surgical correction. Surgical correction includes insertion of a temporary expander under the subcutaneous tissue followed by a permanent implant which is done through multiple surgeries. If the asymmetry is mild, a single breast reconstruction can be performed with an implant expander. Ultimately, our patient opted for surgical reconstruction by plastic surgery with a breast implant.

59 ELECTRONIC CIGARETTE USE AND PERCEPTIONS BY U.S. ADOLESCENTS

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10.1136/jim-2015-000035.59

Purpose of Study To review the existing literature on the use of and attitudes toward electronic cigarettes among U. S. adolescents, and present new results.

Methods Used A PubMed search on articles from 1/1/07 to 1/31/15 using search terms involving e-cigarettes was performed; 721 articles were found. We identified 101 articles based on surveys via their titles. Of these we identified 19 focusing on U.S. adolescents. The 2014 National Youth and Tobacco Survey (NYTS), a nationally representative sample of 22,007 middle and high school students, was analyzed using weighted estimation and logistic regression.

Summary of Results The existing survey literature was limited, either focusing on narrow questions or subpopulations or using old data. Eight articles were based earlier versions of the NYTS, which was only suitable for estimating prevalence. The remaining surveys were fielded before 2012, with dramatic changes in prevalence and awareness in the interim. In 2014 the NYTS was redesigned to increase its focus on e-cigarettes. This data was released in April 2015 and little has been published so we conducted our own analysis. Current use tripled between 2013 and 2014 (High school: 4.5% to 13.4% [11.0%, 15.9%], Middle School: 1.1% to 3.9% [3.0%, 4.8%]). About 1/3 of current e-cigarette users also use conventional cigarettes (HS: 5.1% [4.2%, 6.0%] MS: 1.1% [0.7%, 1.4%]). Some dual users reported trying e-cigarettes at an earlier age than cigarettes (HS: 5.8% [3.2%, 8.5%], MS: 9.3% [2.9%, 15.7%] – percentages are of current dual users). Among current cigarette users we find no association between current e-cigarette use and intended cessation in the next year (crude OR 0.06 [-0.18, 0.30], adjusted OR 0.08 [-0.18, 0.33]). About 2 in 5 students who have never tried e-cigarettes reported that there was little or no harm in smoking e-cigarettes "some days" (HS: 43.1% [41.0 45.2], MS: 38.3% [36.7%, 39.9%]).

Conclusions E-cigarette use is rising sharply in adolescents. Many never-users perceive little harm and are at possibly at risk of initiation. Until recently there has been little

detailed information available about e-cigarette use in adolescents. This is beginning to change with the redesigned NYTS and other resources.

60 AN OBSERVATIONAL REVIEW OF PEDIATRIC INTRAOSSEOUS NEEDLE PLACEMENT IN THE PEDIATRIC EMERGENCY DEPARTMENT

EL Pifko, A Price, C Busch, J Dobson, Y Jiang, R Tuuri. *Medical University of South Carolina, Charleston, SC*

10.1136/jim-2015-000035.60

Purpose of Study The purpose of this study was to compare success rates and time to placement with Manual intraosseous (IO) versus EZ-IO® needles in pediatric emergency department (PED) patients and in a subset≤8 kg.
Methods Used This was a retrospective cross-sectional descriptive study of IO attempts in a tertiary care PED from 2006–2014. Cases were identified through diagnosis and procedure codes for IO infusion, CPR, and cardiac arrest as well as admissions from the PED to the intensive care unit. Outcome measures included success rate, complications, and time to placement in children with an estimated severity index (ESI) of 1. Success rate was defined as number of IO's with documented infusion of fluids per number of attempts. Categorical measures were compared with a Z-test for comparison of 2 proportions and continuous with Student's t-tests.
Summary of Results Of 1748 charts screened, 50 had an IO attempted with 41 documenting the specific device type. For all patients, the EZ-IO® had a higher success rate at 69% (22/32) versus 58% (19/33) (p=0.351). In patients≤8 kg, the success rate was slightly higher with the Manual IO at 55% (17/31) versus the EZ-IO® at 47% (8/17) (p=0.606). In all patients, the Manual IO had shorter time to placement at 5.2 minutes versus 11.1 minutes for the EZ-IO® (see Table 1). In patients≤8 kg, the Manual IO again had a faster time to placement at 4.5 minutes versus 12.8 minutes (see Table 2). Two patients had extravasation with the EZ-IO®.

Abstract 60 Table 1

All Groups	Manual	EZ-IO®	Difference	95% CI	p-value
Time to Placement (Min) Mean ESI 1	5.17 (N=12)	11.14 (N=14)	5.97	1.556–10.397	0.010
Standard Deviation	4	6.21			

Abstract 60 Table 2

≤ 8kg	Manual	EZ-IO®	Difference	95% CI	p-value
Time to Placement (min) Mean ESI 1	4.5 (N=10)	12.8 (N=5)	8.3	1.892–14.708	0.015
Standard Deviation	3.72	7			

Conclusions Although not statistically significant, trends show that the EZ-IO® had a higher success rate in all children while the Manual IO had a higher success rate in children≤8 kg. Both devices had lower success rates in children≤8 kg. The Manual IO was found to have a significantly faster time to placement in all ages.

61 A DIAGNOSTIC CONUNDRUM IN AN IMMUNOSUPPRESSED SEXUALLY ACTIVE PATIENT WITH OROGENITAL ULCERS

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10.1136/jim-2015-000035.61

Purpose of Study A wide differential exists for the diagnosis of orogenital ulcers. In immunosuppressed patients, a high index of suspicion is needed to identify rare conditions, as their presentation may be atypical.
Methods Used Case Report
Summary of Results A 19 year-old female presented with a several day history of fevers, non-bloody diarrhea, and mucosal ulcers of the mouth, vulva, and perianal region. Her past medical history is notable for a renal transplant following bilateral Wilms tumor at age 4, on chronic immunosuppression. She had a recent sexual encounter 1 month prior to presentation. Given those risk factors, disseminated Herpes Simplex Virus (HSV) was high on the differential. She was treated with IV acyclovir and broad-spectrum antibiotics until her infectious studies returned negative (Table 1). By hospital day 7, fever and diarrhea resolved, though her ulcers remained unchanged. Rheumatology, GI, and OB/Gyn were consulted, due to concern for possible Crohn's disease, Lupus, or Behcet's Disease (BD). A rheumatology serology panel and fecal calprotectin were negative. A vulvar skin biopsy showed a neutrophilic/leukocytoclastic vasculitis consistent with BD. Symptomatic treatment with wound care and sitz baths was recommended. Three weeks following discharge, she was symtpom free.
Conclusions Multiple etiologies can cause mucosal ulcers. This can prove to be a diagnostic challenge for clinicians, especially in immunocompromised patients. BD is characterized by recurrent inflammation associated with oral apthae and any of several systemic manifestations (e.g. genital apthae, ocular disease, cutaneous lesions, and GI

Abstract 61 Table 1

CBC with Diff	WBC: 4.53 x 10^3 40% Segs, 26% Bands, 21 Lymphocyte, 11 Monocytes
Creatinine, albumin, LFTs	Cr 3.5 (baseline), Alb 3.4, AST 19, ALT 12, Alk Phos 210
C-RP, ESR	C-RP 1.5, ESR 46
Urine Culture	No growth
Ulcer HSV stain/viral culture	Negative
Serum HSV,EBV, CMV PCR	Negative
Bacterial/Fungal Blood and Wound Cultures	No growth

disease). Treatment may include high dose steroids, anti-TNF therapy and colchicine. Although rare, BD is an important cause of non-infectious orogenital ulcers. Our case emphasizes the importance of a thorough and open-minded approach when evaluating immunosuppressed patients.

62 A RANDOMIZED TRIAL COMPARING METERED DOSE INHALERS AND BREATH ACTUATED NEBULIZERS

MA Snider, J Jacobs, R Kink, B Gilmore, SR Arnold. *University of Tennessee College of Medicine, Memphis, TN*

10.1136/jim-2015-000035.62

Purpose of Study The breath actuated nebulizer (BAN) and metered dose inhaler with spacer (MDI) are both superior to the small volume nebulizer (SVN) in the treatment of asthma exacerbations. Despite there being little evidence for the effectiveness of BAN, institutional and community bias resulted in it becoming the default method of delivery in our Pediatric Emergency Department (ED). We compared BAN to MDI to determine relative clinical efficacy of the two devices in delivering albuterol to patients in the ED.

Methods Used Subjects aged 2 to 17 years, experiencing first time wheeze or mild to moderate asthma exacerbation as defined by a Pediatric Asthma Score (PAS) of 5–11, were enrolled in a randomized, non-blinded, non-inferiority, convenience sample study at a single tertiary care pediatric ED in Memphis, TN. Subjects were randomized to receive albuterol by BAN or MDI via standard dosing protocols based on weight and symptom severity. Aerosolized ipratropium (via BAN) and intravenous magnesium sulfate were given if clinically indicated. The primary and secondary outcomes were patient disposition and ED length of stay (ED LOS). We defined the non-inferiority margin as an admission rate difference of 10% (assuming baseline 45% admission rate) or less. Analyses were adjusted for confounders that were significant at $p \leq 0.10$.

Summary of Results We enrolled 875 patients in this study from October 2014 to April 2015. BAN and MDI groups were comparable for age, gender, and race but not for pre-treatment symptom severity. In the BAN group, 63% had a PAS in the moderate range versus 51.8% in the MDI group ($p<0.003$). The admission rates were 12.1% for the MDI cohort and 12.8%. After adjusting for baseline severity, the risk difference was 0.9% (95% CI -0.26 to 0.0045), demonstrating non-inferiority at a 5% margin. The adjusted ED LOS between the cohorts was -8.4 minutes, (95% CI -22.3 to 5.4).

Conclusions Albuterol therapy by MDI and spacer device is non-inferior for the treatment of mild to moderate asthma exacerbations in children ages 2 to 17 years old. MDI use in the ED could result in better community asthma management by showing families consistent clinical improvement using an appliance they already have at home.

63 DO PEDIATRIC CLINICS SUPPORT MOTHERS TO REACH BREASTFEEDING GOALS?

GL Srinivas, S Yale, R Zweigoron, S Ritchie, S Michalowski, MD Ebeling, JR Roberts. *Medical University of South Carolina, Charleston, SC*

10.1136/jim-2015-000035.63

Purpose of Study The purpose of this study was to evaluate breastfeeding duration, goals and perception of breastfeeding support in primary care pediatric clinics affiliated with a Baby-Friendly Hospital.

Methods Used A 21-item anonymous written survey in English or Spanish, pilot tested on 10 patients at each clinic, was completed by mothers >18 years old with babies <13 months old during well-child checks at two urban clinics, one serving a Hispanic population, the other a resident continuity clinic. We surveyed every other eligible patient to avoid selection bias. Data were entered in REDCap and analyzed with SAS 9.4 using descriptive and comparative statistics and survival analysis. Institutional Review Board approval was obtained.

Summary of Results Of the 149 respondents, most were on Medicaid or uninsured (90.1%), had not finished college (86.9%), were non-white (African-American: 49.7%, Hispanic: 28.9%, White: 12.8%), and were young (<35 years: 91. 7%; <25 years: 39.6%). Most (84.0%) initiated breastfeeding, and 72.2% of 2 month old, 38.9% of 6 month old and 4.8% of 12 month old infants were breastfed. Of 115 with a breastfeeding goal, 82.6% planned to breastfeed <12 months and 39.1% for <6 months. Of mothers with infants older than their breastfeeding goal (61/115), 62.3% had met their goal. Most added formula at <6 months of age (72.7%) and 47.9% at <2 months of age, due to not enough breast milk (30.2%), return to work (27.8%) and wanting baby to get formula (11.9%). Breastfed infants born in a Baby-Friendly Hospital (98 of 124) were less likely to receive formula at <2 months of age (43.6% vs. 70.0%; p=0.03). Most mothers were very comfortable breastfeeding in clinic (74.0%) and rated staff (62.6%) and physicians (69.3%) as very supportive, but only 47.1% gave all items the highest score. Less than half (44.0%) were observed and advised on breastfeeding by a physician or nurse.

Conclusions Breastfeeding initiation was high and lasted beyond 2 months. Birth in a Baby-Friendly Hospital significantly delayed formula use. Though breastfeeding goals were suboptimal, a majority met their personal goal. Items of clinic support were rated highly, but women did not perceive uniform support. In particular, a minority were observed while breastfeeding, indicating need for provider and nurse training.

Adult Clinical Case
Joint Plenary Poster Session and Reception
4:00 PM
Thursday, February 18, 2016

64 AN ELDERLY WITH VOMITING AND ACUTE HEARING PROBLEM: THINK SALICYLATE POISONING

LC Chen, A Islam. *Texas Tech University HSC, Amarillo, TX*

10.1136/jim-2015-000035.64

Case Report Salicylate toxicity presents with very characteristic lab values including respiratory alkalosis, metabolic acidosis, and elevated serum salicylate levels. It is typically caused by aspirin overdose, but bismuth subsalicylate (Pepto-Bismol) overuse can contribute to the toxicity in an elderly patient with limited renal function already taking aspirin. Our case involves an elderly male with poor mentation presenting with nausea and vomiting. A 65 year old male with a history of MI and anoxic brain injury presented to the ER with vomiting and diarrhea. An initial diagnosis of gastroenteritis was made. Upon admission to the internal medicine floor, further combined history from the patient and a relative revealed hearing loss, worsening mental status, and nausea beginning from the previous night. Patient was taking aspirin for the history of myocardial infarction. Physical examination revealed respiratory rate of 36 breaths per minute, poorer than baseline altered mental status, mild hearing loss, and inspection of the mouth revealed a pink stain on his tongue which was revealed to be from Pepto-Bismol. Laboratory values revealed bicarbonate 12, Capillary carbon dioxide 19.1, creatinine 1.40, PH 7.43, anion gap of 20, and serum salicylate level was 80. Diagnosis of accidental salicylate poisoning was made. Patient was placed on supportive therapy and improved.

Discussion Most cases of salicylate poisoning occurs due to aspirin overdose, but there are a number of other factors that could contribute to acute salicylate poisoning such as impaired renal function, oil of wintergreen, and also bismuth subsalicylate that should not be overlooked. This case also reminds internists the importance of a detailed history and physical because many important clues to the patient's diagnoses were revealed. The nausea from the night before and pink tongue revealed the Pepto-Bismol use since it was overlooked when stating medications. The high respiratory rate, mild hearing loss, mental status below baseline, mixed respiratory alkalosis, metabolic acidosis, and normal pH are very characteristic symptoms of salicylate poisoning.

65 COULD A LOW DOSE OF TRAMADOL CONTRIBUTE TO HYPONATREMIA DUE TO DRUG-DRUG INTERACTION?

H Hijazi,[2] I Zeinaty,[2] T Reske,[2] A Abdo,[2] E Aguilar,[1] S Barry[1]. [1]*Louisiana State University Health Science Center, Metairie, LA;* [2]*Louisiana State University Health Science Center, New Orleans, LA*

10.1136/jim-2015-000035.65

Case Report Tramadol is a synthetic opioid used to treat moderate to (moderately) severe pain. It acts centrally via μ-receptors agonist activity in addition to his ability to inhibit the reuptake of neurotransmitters, most notably norepinephrine and serotonin. However, Tramadol has multiple adverse effects-profile like constipation, dizziness, dry mouth, indigestion, abdominal pain, vertigo, nausea, vomiting, drowsiness, headache, and itching in addition to rare but serious side effects including seizures, increased risk of suicide, serotonin syndrome, decreased alertness, and drug addiction. We report a case of 94 year old lady with complex comorbidity and polypharmacy, who sustained a pelvic fracture and was put on a relatively low dose of tramadol for treatment of her severe pain. She complained of "not feeling well" and dizziness since the start of the opioid analgesia. Her symptoms were getting worse with time and the blood work up showed significant drop of her serum sodium from baseline of 140 mmol/L to 120 mmol/L with low serum osmolality. Fluid restriction alone was not sufficient to treat the symptomatic acute hyponatremia. The latter resolved only after the discontinuation of Tramadol. However despite the patient's quick clinical recovery of symptoms, the serum sodium level remained relatively low for up to 4 weeks before normalization.

66 AN UNUSUAL ADVERSE EFFECT OF A NOVEL ORAL ANTICOAGULANT

WT Palfrey, F Jo-Hoy, R Jacob. *University of Florida COM-Jacksonville, Jacksonville, FL*

10.1136/jim-2015-000035.66

Case Report We present the case of a 67-year-old Caucasian man who presented to the emergency department from his nursing home with several days of left-sided chest pain, described as aching, radiating to the left arm and shoulder. The pain was exacerbated by motion of the left upper extremity and palpation of the chest wall. It was relieved with intravenous and oral opioid analgesics. He denied fevers, chills, or abdominal complaints. He denied any trauma or falls. Review of systems was positive for chronic cough with scant sputum and orthopnea. Exam revealed tachycardia, bilateral wet rales, and a large ecchymosis over the left lateral chest wall that was tender to palpation. Medical history consisted of coronary artery disease, atrial fibrillation on oral anticoagulation with rivaroxaban, hypertension, ischemic stroke with residual left-sided weakness, chronic obstructive pulmonary disease (COPD), diabetes mellitus, depression, and dementia. Surgical history consisted of cholecystectomy. He is a former smoker. Laboratory studies demonstrated normocytic anemia, hyperglycemia, normal liver function tests, normal troponin and total creatine kinase, mildly elevated pro-BNP, and mildly elevated coagulation studies. Specifically, the internal normalized ratio (INR) was 1.5, prothrombin time (PT) was 17.9, and the activated partial thromboplastin time (aPTT) was 38. Plain film revealed no acute cardiopulmonary disease. ECG revealed sinus tachycardia with a right bundle branch block that was consistent with prior ECGs. Computed tomography of the chest with

intravenous contrast showed a large heterogeneous left chest wall mass consistent with an intramuscular hematoma. The nursing home was requestioned thoroughly, and there was no mishandling of the patient and no report of a fall at the institution prior to his complaint. His rivaroxaban was discontinued, and the patient was started on warfarin to be dosed to an INR of 2–3 and he was discharged back to the nursing home. There are abundant reports of the life-threatening complications of novel oral anticoagulant use. This is a report of a relatively benign but unusual complication of their use, the intramuscular hematoma. It is especially unusual in that it took place in the absence of any reported trauma to the patient who suffered the adverse event.

Allergy, Immunology, and Rheumatology Joint Plenary Poster Session and Reception 4:00 PM Thursday, February 18, 2016

67 FALSE ELEVATION OF CARDIAC BIOMARKERS IN A CASE OF INCLUSION BODY MYOSITIS

AG Adiga, K Nugent, D Ragesh Panikkath. *Texas Tech University Health Sciences Center, Lubbock, TX*

10.1136/jim-2015-000035.67

Case Report The diagnosis of an acute myocardial infarction has traditionally relied upon the combination of chest pain, electrocardiographic manifestations, and elevations in biomarkers of cardiac injury. Troponin T and creatine kinase MB fraction (CK-MB) are commonly used as biomarkers for cardiac injury. Though these biomarkers are very sensitive and specific indicators of damage to myocardium, sometimes they can be falsely elevated leading to an economic and emotional burden to the patient. We present a case of Inclusion body myositis presenting as chest pain with falsely elevated Troponin T and CK-MB without any coronary ischemia. Troponin T is considered to be a highly sensitive marker of myocardial injury, but sometimes it can be elevated in non-cardiac conditions. Our patient presented with atypical chest pain but elevated levels of troponin T and CK-MB and warranted further evaluation to rule out myocardial ischemia. He underwent an echocardiogram and nuclear stress test which were negative for myocardial ischemia. In patients with myositis constant muscle breakdown and rebuilding secondary to immune mediated destruction of skeletal muscle leads to elevated CK, CK-MB and troponin T. As the skeletal muscle begins to regenerate, re-expression of embryonic genes causes an increase in CK-MB in the new skeletal muscles, and this increase in CK-MB can represent anywhere from 5–10% of total CK . During regeneration, skeletal muscles also express cardiac Troponin T leading to increase in its levels. These laboratory findings leads to incorrect clinical interpretation in patients with a suspicion of myocardial damage. Sometimes this elevation can point at false positives thereby masking a true event of myocardial injury. It has been proven that there is no increase in cardiac Troponin I with the regeneration of skeletal muscles. So this problem can be circumvented by using cardiac troponin I levels to differentiate between skeletal muscle damage versus cardiac muscle lesions.

68 AN UNUSUAL CASE OF RECURRENT LIFE-THREATENING SEIZURES AS ONLY PRESENTATION OF SYSTEMIC LUPUS ERYTHEMATOUS

V Bazylevska, D Ragesh Panikkath, I Huizar. *TTUHSC, Lubbock, TX*

10.1136/jim-2015-000035.68

Case Report Systemic lupus erythematosus (SLE) is a chronic multisystem autoimmune inflammatory disease. Neuropsychiatric manifestations are included in the American College of Rheumatology (ACR) criteria for diagnosis of SLE. The reported frequency of neuropsychiatric involvement varies greatly from twelve to ninety-five percent among various studies. Its diagnosis remains challenging, as mild disorders such as mild depression, anxiety and polyneuropathy are common in the general population. A fifty-five year old male with a past medical history of diabetes mellitus, idiopathic seizure disorder, and ischemic stroke was transferred to the tertially referral center due to status epilepticus and secondary respiratory compromise. Intubation was attempted multiple times without success, and cricothyrotomy had to be performed. He was noted to have complete left-sided paralysis and facial droop. The patient, who had been diagnosed with seizure disorder in his 30 s, had long since been taking antiepileptic medications. Despite extensive previous evaluation, no causative agent of the condition had been identified. Each episode of seizures had been accompanied by left-sided Todd's palsy.Three years prior to the current presentation, his Todd's palsy was interpreted as ischemis stroke and thrombolytic was administered. Chronic clopidogrel therapy had been utilized. During current hospitalization head and neck CT, head MRI and MRA were performed, which were negative for any pathology. His weakness resolved shortly after presentation. A connective tissue disease panel was performed and demonstrated high ANA and RF titers, positive anti-DS DNA, anti-RNP antibodies, and negative anti-Smith antibodies. His C-reactive protein level was 350. The patient denied any history of joint pain, oral ulcers, skin lesions, or unexplained episodes of fever. Both a CBC and renal function panel were normal. He admitted some mild chronic hand stiffness. The patient was diagnosed with SLE and started on hydroxychloroquin. This in an unusual case of recurrent life-threatening seizures accompanied by unilateral Todd's palsy as the only presentation of SLE. In a patient with late-onset seizure disorder connective tissue panel should be performed as part of routine work up.

69 OMALIZUMAB AS A TREATMENT FOR CHRONIC RHINOSINUSITIS WITH NASAL POLYPOSIS

BA Brunet, G Marshall. *University of Mississippi Medical Center, Jackson, MS*

10.1136/jim-2015-000035.69

Purpose of Study Chronic rhinosinusitis with nasal polyposis (CRS-NP) can have a severe adverse impact on quality of life. In patients who have failed topical intranasal corticosteroid (ICS) treatment and are not surgical candidates for polypectomy, an alternative therapy is needed to spare the patient from side effects of chronic oral CS (OCS) use. CRS-NP and asthma share histopathologic features including a predominance of eosinophils recruited by Th2 cells, and elevated local IgE production. These parallels allow a rationale for potentially effective treatment of NP by a proven therapeutic intervention for asthma-the monoclonal anti-IgE antibody omalizumab (OMA).

Methods A 64 yo AA male presented with CRS-NP. He failed ICS treatment and was managed with chronic OCS as he was not a surgical candidate due to multiple comorbidities. He did not meet criteria for aspirin exacerbated respiratory disorder. Several attempts at weaning OCS failed, and OMA was initiated as an alternative therapy.

Summary of Results The patient's CRS-NP was managed with oral and ICS, antibiotics, and nasal flushes for 26 months. He required 8 high dose OCS bursts and was tapered to 10 mg daily between each, but was unable to wean completely. He had one treatment of kenalog infused nasopores, and 2 budesonide nasal irrigation treatments, all without effect. He was treated with prolonged antibiotics for sinusitis flares on 4 occasions. While on chronic OCS, he had daily shortness of breath and cough. His clinical picture was consistent with asthma-COPD overlap syndrome with significant bronchodilator reversibility, moderate obstruction, and moderate decrease in gas exchange. Total serum IgE was 142 IU/dL. He thus met criteria for OMA therapy for his lung disease and began 300 mg every 4 weeks to provide an alternative therapy to chronic OCS. He was weaned off prednisone, and by his second infusion reported marked decrease in his nasal and respiratory symptoms and significant reduction in medication usage. By month 3, physical exam revealed no nasal polyps or intranasal obstruction.

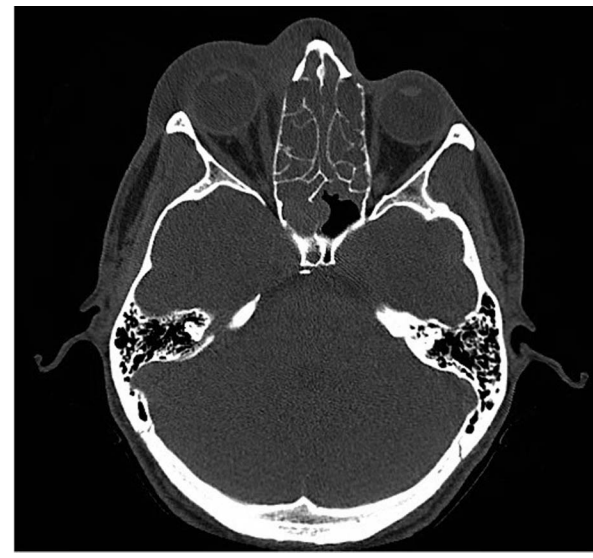
Conclusions OMA was effective in resolving NP in this patient. In OCS-dependent patients who are not surgical candidates, OMA may be an effective alternative with a more favorable side effect profile in the management of CRS-NP.

70 ASPIRIN INDUCED RESPIRATORY DISEASE COMPLICATED BY ORBITAL CELLULITS AND FACIAL OSTEOMYELITIS

F Tawadros, M Jbara. *East Tennessee State University, Johnson City, TN*

10.1136/jim-2015-000035.70

Case Report A 27 y.o. male with PMH of asthma and recurrent nasal polyposis s/p FESS, bilateral frontal, bilateral sphenoid, bilateral maxillary, and bilateral ethmoid polypectomy & pathology revealing severe eosinophilia. Patient woke up with slight redness and swelling on left upper eyelid and pain on inner canthus of left eye. He failed augmentin as outpatient therapy and started to spike fever and on next day he woke up to find that his left eye was completely shut by swelling. He revisited the ED and had a CT which showed right facial /periorbital /preseptal /perinasal soft tissue swelling and cellulitis with near complete paranasal sinus opacification. CT scan also showed focal bone erosions concerning for osteomylitis. Patient had severe respiratory distress and bronchospasm when he took aspirin in the past, and that he is currently on on albuterol and Fluticasone/salmeterol inhalers. Patient was treated with Vancomycin, cefimpime and clindamycin on admission, inflammation subsided and was discharged on IV vancomycin and cefipime through PICC line for 6 weeks. However patient was readmitted to the hospital within 1 month with fever and severe sinusitis while being compliant with antibiotic administrasion Conclusion : Samter's triad can be a potential reason for severe infections involving facial bones and extending to the orbit, even after FESS. Research needs to bo done on the effect of leukotriene receptor antagonists and role of monoclonal antibodies as omalizumab in preventing recurent sinus infections in this selected group of patients



Abstract 70 Figure 1

71 A CASE OF PULMONARY MUCORMYCOSIS IN A PATIENT WITH POSSIBLE ANTI-NUCLEAR CYTOPLASMIC ANTIBODY ASSOCIATED VASCULITIS

RA Williams, S Gonnalagadda, JK Ellis, V Majithia, SC Thigpen. *University of Mississippi Medical Center, Jackson, MS*

10.1136/jim-2015-000035.71

Case Report Mucormycosis is rare, with estimated incidence of 1 in 1,000,000. It is a frequently devastating necrotizing fungal infection acquired through inhalation of

spores that can spread to the brain or lungs. Mortality rates for pulmonary mucormycosis have been reported as high as 76%. We present a case of pulmonary mucormycosis in a patient with possible Anti-Nuclear Cytoplasmic Antibody (ANCA) associated vasculitis. A 53 year old black male with a history of Cryptogenic Organizing Pneumonia and hyperglycemia presented with a chief complaint of two months progressive shortness of breath. Associated symptoms included occasional hemoptysis, fevers, and a 20 pound weight loss. Prior workup revealed positive p-ANCA, and the patient had been treated with prednisone and cyclophosphamide for suspected Granulomatosis With Polyangitis (GPA). On admission, the patient was febrile with rhonchi in both lung bases. Labs revealed a white blood cell count of 32,000 TH/cmm, creatinine of 4.38 mg/dL, and urinalysis with microscopic hematuria. Computed tomography (CT) scan of the chest showed large thick-walled cavitary lesions in both lungs. We treated him with prednisone for suspected GPA flare and broad spectrum antibiotics for possible pneumonia. His oxygen requirement began to increase, so we initiated high dose solumedrol. Given his lack of improvement, pulmonary performed bronchoscopy with fine needle aspiration, which was interpreted as aspergillus. We added Voriconazole, but he continued to decline. He was intubated for hypoxic respiratory failure and expired two days later. Endobrochial biopsy results later revealed acute necrotizing inflammation and mucormycosis with soft tissue invasion. Hyperglycemia, treatment with glucocorticoids, and immunosuppression are major risk factors for mucormycosis. Symptoms of mucormycosis may mimic a flare of ANCA Associated Vasculitis, such as GPA, with fever, hemoptysis, and dyspnea. In addition, GPA treatments are risk factors for zygomycete infections. Voriconazole has no activity against zygomycetes and may contribute to breakthrough zygomycosis. Amphotericin and surgical management are key to survival.

72 MYOFASCIITIS: A NOVEL MANIFESTATION OF MINOCYCLINE INDUCED AUTOIMMUNE DISEASE

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10.1136/jim-2015-000035.72

Introduction Minocycline is associated with multiple autoimmune syndromes such as minocycline induced lupus and autoimmune hepatitis. Myofasciitis, or inflammation of the muscle and associated connective tissue, is a poorly understood entity with few known triggers. Hereby, myofasciitis likely associated with long-term minocycline use is reported.
Case Description A 16 yo female was evaluated for 1 month history of fatigue, polyarthralgia, myalgia, and generalized weakness. She received 2 years of minocycline for acne. Initial labs revealed elevated erythrocyte sedimentation rate and lactate dehydrogenase, lymphopenia, transaminitis, and positive anti-cardiolipin antibodies. Anti-nuclear antibody, anti-histone antibody, anti-dsDNA antibody, rheumatoid factor, and Lyme and EBV serologies were negative. CK and aldolase were normal. High dose corticosteroid therapy resulted in significant improvement of her disease but she became steroid dependent with recurrence of symptoms as steroids were weaned. She could not tolerate sulfasalazine and remained on low dose steroids 4 months after initial evaluation. Intermittent episodes of full body tingling and numbness prompted MRI of the brain (negative) and electromyogram showing myopathic changes of proximal and upper muscle groups. Left thigh muscle biopsy demonstrated epimysial perivascular inflammation, mitochondrial proliferation, non-necrotic fibers and lack of myophagocytosis, consistent with myofasciitis. Treatment with subcutaneous methotrexate led to swift resolution of all clinical symptoms. Steroids were weaned off completely. Methotrexate is currently being weaned off after a full year of therapy without symptom recurrences or lab abnormalities.
Discussion Myofasciitis is a relatively uncommon condition with poorly understood causes and has not been reported as a minocycline-induced autoimmune syndrome. This case of myofasciitis confirmed by muscle biopsy suggests a novel manifestation of minocycline induced autoimmune disease. Steroids led to prompt resolution of symptoms but steroid sparing agents were ultimately most effective in treating this process.
Conclusion Myofasciitis should be considered in the differential diagnosis of patients with a history of minocycline use who present with polyarthralgias, myalgias, and elevated inflammatory markers.

Cardiovascular
Joint Plenary Poster Session and Reception
4:00 PM
Thursday, February 18, 2016

73 CANCELLED

74 CANCELLED

75 AN INTERESTING CASE OF TAKOTSUBO CARDIOMYOPATHY

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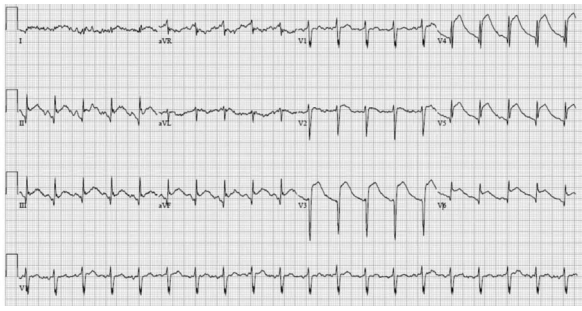
10.1136/jim-2015-000035.75

Case Report A 45 year old male with a past medical history of quadriplegia secondary to a motor vehicle accident presented to the ED with fever and altered mental status. Patient was found to be septic secondary to pneumonia. After initial improvement, the patient was noted to undergo an acute change in mental status associated with tachypnea, tachycardia and dyspnea. EKG showed new diffuse ST elevations. A STEMI alert was initiated and the patient underwent emergent coronary angiography which revealed normal coronaries. The echo revealed an EF of 15% and hypokinesis of all segments except basal segments consistent with Takotsubo cardiomyopathy. The patient was started on a beta blocker, ace inhibitor and warfarin. A follow up echo two weeks later showed improvement of left ventricular function to 50%. Takotsubo cardiomyopathy is a reversible cardiomyopathy, with classical echo



Abstract 75 Figure 1

findings of apical ballooning and hypokinesis of all segments with basal segment sparing. Most commonly diagnosed in post-menopausal women in the setting of emotional stress. Our patient was a 42 year old male who underwent physical stress in the setting of sepsis. This case illustrates the importance of using EKG and cardiac biomarkers appropriately and always relating the findings to the clinical context. There are many STEMI mimickers, including Takotsubo cardiomyopathy. There are some criteria which can help differentiate Takotsubo ST elevations from acute MI. ST elevations in Takotsubo are diffuse, there are no reciprocal changes and there is an absence of q waves. Cardiac enzymes are also frequently elevated but not to same extent as an acute MI. Takotsubo is a diagnosis of exclusion and coronary angiogram must be performed to rule out acute MI. EKG and cardiac enzymes are helpful tools for physicians however like any diagnostic tool they must be correctly applied to the clinical context.

76 TAKOTSUBO CARDIOMYOPATHY PRESENTING WITH ALS

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10.1136/jim-2015-000035.76

Introduction Takotsubo Cardiomyopathy consists of transient systolic dysfunction of apical segments of the left ventricle that is similar to myocardial infarction, but in the absence of coronary artery disease. The cardiomyopathy is transient and the duration of therapy is variable.

Case A 77 year-old man with history of Amyotrophic Lateral Sclerosis presented to the Emergency department with respiratory distress requiring airway protection. The patient was complaining of fatigue, sore throat, and difficulty managing secretions. At baseline, the patient's ALS had progressed to quadraparesis and severe bulbar dysfunction. On the day of admission, the patient took valium and became unresponsive, prompting his wife to call EMS who gave naloxone without response. He was intubated and admitted to ICU for further management. Vitals were significant for hypotension and bradypnea and patient was placed on norepinephrine. Physical exam was unremarkable. EKG initially showed low voltage QRS in limb leads, but subsequent EKGs were significant for ST and T wave changes in anterolateral leads. Troponins were trended and peaked, 12 hours from initial presentation, at 1.78 ng/mL. Cardiology was consulted and patient underwent coronary angiography for suspected NSTEMI, which showed nonobstructive coronary disease. An echocardiogram showed left ventricular systolic dysfunction and distal anteroseptal wall akinesis with preserved basal contraction. The patient continued on norepinephrine, and was transitioned to dobutamine and phenylephrine. He was eventually weaned off all pressors and was started on ACE-I, beta-blocker and aspirin. A gastrostomy tube was placed for tube feedings. The patient was extubated and discharged with home BIPAP.

Discussion A proposed diagnostic criteria by the Mayo Clinic requires four conditions for the identification of Takotsubo: transient dyskinesis of the left ventricular midsegments with or without apical involvement on echocardiography; absence of obstructive coronary disease on angiography; new EKG abnormalities or modest elevation of troponins; absence of pheochromocytoma or myocarditis. Patients who have been diagnosed with Takotsubo are treated similarly to patients with heart failure or systolic dysfunction.

77 CARDIOGENIC SHOCK AFTER A COMPLICATED VEIN GRAFT INTERVENTION: WHERE EARLY PLACEMENT OF IMPELLA DEVICE WAS A LIFE-SAVER

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10.1136/jim-2015-000035.77

Introduction Percutaneous mechanical circulatory support (MCS) devices are increasingly used in patients undergoing high-risk percutaneous coronary intervention (PCI) as prophylactic or back-up measures. We present a case of a PCI complicated by acute myocardial infarction and cardiogenic shock, rescued by prompt use of the Impella CP® Device.

Case A patient with history of 3-vessel bypass surgery in 2005, presented to outside hospital with unstable angina. Catheterization revealed 85% stenosis in the saphenous vein graft (SVG) going to obtuse marginal artery (and patent other grafts). PCI to the SVG was done but got complicated by acute thrombosis and no reflow in the vessel during retrieval of the distal filter wire. Patient developed chest pain, ST elevation and cardiogenic shock requiring dopamine and norepinephrine, and was transferred emergently to our cath lab for higher level of MCS. Upon arrival his blood pressure was 82/51 mmHg on 2 vasopressors and he soon developed 3 episodes of ventricular fibrillation requiring defibrillation with further decline in BP. Since he was unstable for any PCI, we placed an Impella CP device to improve his hemodynamic status first. This, indeed, was successful and allowed the PCI to be performed as he became more stable. Several rounds of aspiration and rheolytic thrombectomy were done retrieving large amounts of clot from the SVG. His ST elevation resolved and normal flow was restored in the vessel. Patient continued to improve, vasopressors were gradually weaned off and the Impella was removed after 48 hours. He was ultimately discharged home in stable condition.

Discussion SVGs have higher rate of degeneration and atherosclerosis compared to arterial conduits. They also have a larger plaque burden and PCI to SVGs can be complicated by no reflow state more frequently. Percutaneous MCS devices (such as Impella) can be used in patients who develop cardiogenic shock as a complication of PCI. They can be placed in the cath lab without the need for surgical cutdown. Other major advantage is that they improve the hemodynamic status and allow the PCI to be continued to correct the underlying pathology (as in our patient). When used for this purpose, they should be placed as soon as possible to provide the greatest benefit.

78 LEFT VENTRICULAR OUTFLOW TRACT TACHYCARDIA AS A RARE AND LATE COMPLICATION OF TRANSCATHETER AORTIC VALVE REPLACEMENT

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10.1136/jim-2015-000035.78

Introduction Transcatheter aortic valve replacement (TAVR) can be associated with electro-conductive complications, mainly various types of blocks. Ventricular tachycardia (VT) in association with TAVR is rarely reported. We present a case, for the first time in the literature, with VT originating from left ventricular outflow tract (LVOT) as a late complication of TAVR.

Case Presentation A 91 year-old male with history of inferior myocardial infarction, coronary bypass surgery (20 years prior), aortic stenosis s/p TAVR (2 years prior, with patent 3/3 grafts at the time) presented with abrupt onset of chest pain and dyspnea. He was tachycardic (160 bpm) but stable. EKG showed a regular monomorphic wide complex tachycardia consistent with VT and its origin could be localized to LVOT based on the surface EKG criteria. He was given lidocaine 1 mg/Kg which terminated the VT and resolved his symptoms. Echocardiogram showed a well-seated aortic bioprosthetic valve, normal transvalvular gradients and no regurgitation. Lidocaine infusion was continued and transitioned to oral mexiletine 200 mg tid. Cardiac biomarkers remained negative. Patient remained stable and was discharged on medical therapy. He did not want to undergo any invasive procedures (ablation, defibrillator, etc.). Two months later, he had an identical presentation with the same VT which was treated with lidocaine and the mexiletine dose was increased to 400 mg tid which controlled further recurrences.

Discussion VT, especially late-onset after TAVR, has not been reported in the literature. Although our patient had a history of ischemic heart disease, he never had VT before his TAVR. Furthermore, the origin of his VT was from LVOT and not from his inferior wall scar. LVOT VTs are generally not related to ischemia. Development of heart blocks after TAVR has been linked to overexpansion of the prosthesis and implantation depth into LVOT. It is possible that a similar process causing a local scar or trigger could have been the etiology of VT in our patient. Awareness of possible complications of TAVR helps to better determine its long-term outcomes. However, such rare complications should not preclude the procedure which continues to show promising results in short and intermediate-term outcome studies.

79 MYOCARDITIS AS A CAUSE OF NEW ONSET LEFT BUNDLE BRANCH BLOCK WITH ACUTE SEVERE MITRAL REGURGITATION

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10.1136/jim-2015-000035.79

Case Report: Introduction New onset left bundle branch block with acute severe mitral regurgitation is most commonly associated with acute myocardial infarction/ischemia. Here, we present a case with myocarditis as a rare cause of this entity.

Case A 58-year-old woman with past medical history of rheumatoid arthritis presented with shortness of breath for the past three weeks. The patient had been taking prednisone, methotrexate, plaquenil and adalimumab. She had been diagnosed with possible sinusitis two weeks prior to admission and had taken antibiotics without significant improvement. Her initial vital signs were blood pressure 82/60 mmHg. On physical examination, she had soft pansystolic murmur grade 2/6 at the apex. Laboratory findings were significant for elevated troponin-t of 0.14 ng/mL and pro-BNP of 3,106 pg/mL. ECG shows new onset left bundle branch block. The patient was diagnosed with an acute coronary syndrome and was brought to cardiac cath lab where she developed ventricular fibrillation and later asystole prior to the procedure. She was defibrillated with subsequent return of spontaneous circulation and was intubated. An intra-aortic balloon pump and a percutaneous left ventricular assisted device (Impella CP®) were placed. Coronary angiogram did not show significant stenosis, and the left ventriculogram showed an ejection fraction of 30–35% with global hypokinesia and severe mitral regurgitation. Echocardiogram revealed normal cardiac chamber size, suggesting acute regurgitation. Cardiothoracic surgery was consulted but did not think patient could tolerate a mitral valve surgery at this point. She developed PEA and was resuscitated 4 times. Her family decided to change the code status to DNR, and the patient passed away.

Discussion This patient has developed acute myocarditis causing acute papillary muscles dysfunction and subsequently developed severe mitral regurgitation. The causes of myocarditis in this case could be viral infection or rheumatoid arthritis. Also, there have been case reports of myocarditis induced by methotrexate, adalimumab, and plaquenil. Myocarditis can present with mitral regurgitation and left bundle branch block but is usually accompanied by significant ventricular chamber enlargement.

80 THE EVIDENCE BASE IS SCANT FOR NUTRITION'S ROLE IN HEART FAILURE: MORE RESEARCH IS NEEDED

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10.1136/jim-2015-000035.80

Purpose of Study Nutrition research has the potential to identify ways of preventing and managing heart failure

(HF), leading to reduced costs and improved patient outcomes. Diet is critical in HF as nutritional needs and intestinal absorption are altered. However, the evidence base for nutrition-related guidelines and standards of care is weak. To better understand HF-related nutrition research funding provided to date, and to identify issues that must be addressed by NIH applicants, a portfolio analysis was conducted.

Methods Used The Federal RePORTER database (http://report.nih.gov/) and other internal NIH databases for FY 2000–2015 were searched for funded projects with key terms "nutrition or diet or dietary supplements" and "heart failure". Also evaluated were the levels of evidence underlying major professional nutrition-related HF practice guidelines.

Summary of Results Fifty-seven unique projects were funded during 2000–2015, the majority through research project grants (R mechanisms). Most of the projects were supported by three NIH Institutes (NHLBI, NINR, and NIA) and the Office of Dietary Supplements. HF projects were categorized as: observational studies (longitudinal cohorts; risk factor identification); diet/supplement interventions (effectiveness trials; proof of concept trials; others); and mechanistic animal studies (diet factors; metabolic factors). There were no translation or dissemination projects. Most of the behaviorally-oriented studies evaluated adherence models and education modalities. It is especially challenging to launch well-powered clinical efficacy and effectiveness studies that compare different dietary treatments (see: http://www.nhlbi.nih.gov/research/reports/2013-heart-failure-management).

Conclusions Nutrition issues and diet interventions are understudied in HF patients. Current standards of care include diet recommendations but these lack a strong evidence base. Data gaps include elucidation of the sodium threshold, nutrition management approaches to combat protein wasting or sarcopenic obesity, the role of micronutrients and dietary supplements, and the role of the microbiome. All types of research are needed, particularly well-designed clinical efficacy and effectiveness studies.

81 SEVERE BRADYCARDIA: A RARE COMPLICATION OF INTRAVENOUS METHYLPREDNISOLONE

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10.1136/jim-2015-000035.81

Case Report: Introduction Intravenous methylprednisolone (IVMP) is indicated for the treatment of acute attack of multiple sclerosis (MS). Side effects of short-term IVMP include hyperglycemia, fluid retention and cardiac arrhythmia. We report a rare case of sinus bradycardia after receiving high doses of IVMP in a MS patient.

Case Description A 33-year-old woman has had relapsing remitting multiple sclerosis (RRMS) without autonomic dysfunction since 2009. In 2011, patient experienced an acute exacerbation of MS and received 3 doses of 1 g of IVMP. After receiving the second dose of IVMP, she developed asymptomatic bradycardia with a heart rate of 38/min. Her heart rate spontaneously returned to normal sinus rhythm rate 80/min 2 days after completing treatment. In 2015, she had another attack of MS and presented with paraparesis. Due to the previous IVMP induced bradycardia, high dose IVMP (1 g/d) was divided into 250 mg every 6 hours and given for 5 days. After the 12th dose of IVMP, her heart rate started decreasing to 47–50/min without hemodynamic instability and symptom. ECG showed sinus bradycardia. IVMP was continued. Laboratory data did not show electrolyte abnormalities. When her heart rate decreased further to 34/min, the IVMP was discontinued, and the patient was transferred to cardiac intensive care unit for close monitoring. Her heart rate slowly increased to 55–60/min 12 hours after the last dose of IVMP. The patient was observed for 12 more hours and discharged home. She returned to follow up at clinic in 2 weeks with heart rate of 82/min.

Discussion Cardiac arrhythmia has been reported in MS patients with autonomic involvement who received IVMP. Sinus tachycardia is the most common dysarrhythmia. However, severe sinus bradycardia is a rare side effect of high dose IVMP in MS patients without autonomic dysfunction. In our case, bradycardia still developed even after dividing the doses of IVMP. The mechanism of methylprednisolone induced bradycardia is currently unknown. As the elimination half-life of IVMP is between 1.8 to 5.2 hours, cardiac monitoring for 12–24 hours is recommended in patients who develop bradycardia after IVMP administration.

82 UNUSUAL CASE OF SPONTANEOUS CORONARY ARTERY DISSECTION MIMICKING ACUTE PERICARDITIS

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10.1136/jim-2015-000035.82

Case Report: Introduction Spontaneous coronary artery dissection (SCAD) emerges as a rare cause of acute coronary syndrome (ACS) and sudden cardiac death (SCD). SCAD usually affects young women and is associated with peripartum period, significant emotional or physical stress. Clinically, it almost exclusively presents as ACS. We present an unusual case of spontaneous LAD dissection in a young male, presenting with diffuse ST elevation, mimicking acute pericarditis.

Discussion 33 African American male with past medical history of hypertension and tobacco abuse presented with sudden onset atypical chest pain while drinking alcohol. The patient reported recent upper respiratory infection. ECG was significant for ST elevation in inferior and anterolateral leads, which was interpreted as acute pericarditis. Initial troponin T was negative. UDS was negative. Bedside echocardiogram showed normal EF and was negative for pericardial effusion or regional wall motion abnormalities. CT of the chest did not show any significant pathology. Subsequent troponin T was 0.13 and later 0.6. Subsequent ECG showed resolution of inferior leads ST elevation, but persistent anterior leads ST elevation. Chest pain improved, but did not resolve. It was decided to proceed with

coronary angiography, which was significant for LAD dissection. Drug-eluting stent was placed to proximal LAD. Upon discharge the patient was pain-free, ECG demonstrated near total resolution of ST elevation. At 1 month follow up the patient remained chest pain free. Echocardiography demonstrated normal EF and apical akinesis.

Conclusions SCAD is a rare but potentially life-threatening condition. Although classic SCAD patient is a young female presenting with STEMI or non-STEMI, atypical presentations such as described above should not be overlooked. Treatment options include conservative management, PCI or CABG. SCAD warrants prompt diagnosis with risk stratification with subsequent therapeutic decision making.

83 VOLUME OVERLOADED! THE USE OF ULTRAFILTRATION IN THE MANAGEMENT OF DECOMPENSATED HEART FAILURE

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10.1136/jim-2015-000035.83

Case Report A 68 year old male veteran with a history significant for dilated cardiomyopathy, morbid obesity, obstructive sleep apnea and pulmonary hypertension presented to the emergency department complaining of significant weight gain associated with bilateral lower extremity edema and dyspnea on exertion. He denied non-adherence to his medical therapy or ordered fluid restriction, but did admit to increased salt intake and the daily intake of whiskey. The patient had been admitted three months previously and was then discharged at 368 lbs. He was now noted to weigh 440 lbs. Examination was notable for tachypnea, bibaslilar crackles, an irregularly irregular heart rhythm with a 3/6 holosystolic murmur and 3+ pitting edema to the thighs bilaterally. The patient was admitted to the CCU and was started on a continuous Bumex infusion at 0.5 mg per hour. Echocardiography was notable for an ejection fraction of 25–30% associated with severe dilation of all four chambers of the heart, moderate mitral regurgitation, severe tricuspid regurgitation and a right ventricular systolic pressure estimated to be greater than 60 mm Hg. A Lexiscan found no evidence of significant potential ischemia or transmural infarction. Following several days with an unsatisfactory response to diuresis, this infusion was discontinued and the patient was started on ultrafiltration. Over the course of the next several days the CCU team monitored the patient's weight, net fluid loss and CBC monitoring for signs of concentration. Ultimately, following five days of ultrafiltration, the patient reached a body weight of 340 lbs, 100 lbs less than his weight at presentation less than two weeks before. He was discharged on guideline directed medical therapy for systolic heart failure. Ultrafiltration produces an isotonic ultrafiltrate from whole blood across a semipermeable membrane in response to a transmembrane pressure gradient. It removes more sodium than diuretic therapy and less electrolyte disturbances are noted. Since sodium is a major determinant of extracelllular fluid volume, ultrafiltration decreases ECF volume more than diuretics. A class IIb recommendations put forth by the AHA indicate that ultrafiltration should be considered in patients with obvious volume overload or refractory congestion.

84 MITRAL VALVE CALCIFICATION AS A NIDUS FOR THROMBUS FORMATION

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10.1136/jim-2015-000035.84

Case Report: Purpose Mitral valve annular calcification (MAC) increases the risk of stroke twofold. There is a linear association between the severity of MAC and the risk of stroke even after excluding patients with traditional risk factors for stroke. The mechanism of thromboembolic stroke in the presence of MAC is not known and whether there is a causal effect remains uncertain. Herein, we describe 2 patients who were found to have MAC and thrombus formation associated with it; one of the patients had a stroke while the other did not.

Case Report 1 MK, a 93 yo woman with hypertension, dyslipidemia and coronary artery disease with distant coronary artery bypass grafting, who presented with sudden onset left sided weakness and slurred speech. Computed tomography revealed acute infarct of right basal ganglia and angiogram showed chronic occlusion of proximal M2 branch of right middle cerebral artery. There was no evidence of hypercoagulable state, endocarditis or arrhythmia. MAC with associated anterior leaflet thrombus was found on transthoracic echocardiogram (ECHO).

Case Report 2 SB, a 62 yo woman with hypertension, dyslipidemia and diabetes who presented with non-ST elevation myocardial infarction and angiographically proven coronary artery disease that required drug-eluting stents. An echo-dense thrombus was found at the site of MAC by echocardiogram. There was neither evidence of hypercoagulable state nor evidence of endocarditis or arrhythmia.

Conclusions MAC can be associated with thrombosis and thromboembolic events; however, the exact mechanism of this association remains unknown. Not all patients with thrombosis superimposed on MAC develop stroke. The optimal treatment is therefore uncertain as would be the duration of any regimen of anticoagulation therapy.

85 A CLASSIC CASE OF CARDIAC TAMPONADE CAUSED BY AN UNCOMMON DISORDER

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10.1136/jim-2015-000035.85

Case Report: Purpose The accumulation of pericardial fluid accounting for increased intrapericardial pressure with tamponade is typically a transudate of hydrostatic or effusion of infectious origin, respectively. Herein, we present a case of chylous pericardial effusion.

Case Report A 23-year-old man presented with worsening chest pain, shortness of breath, and tender lymphadenopathy of one month duration without constitutional symptoms. He has a history of Kikuchi-Fujimoto Disease (KFD),

a histiocytic necrotizing lymphadenitis, confirmed by excisional lymph node biopsy. BP 136/86, HR 126, jugular venous distention, tender right supraclavicular lymphadenopathy, muffled heart sounds and bibasilar crackles. EKG: sinus tachycardia with ST elevation in I, II, III, AvL, AvF, V3-V6, TTE showed a large pericardial effusion with 25% variation in mitral valve inflow velocities with inspiration consistent with impending tamponade pathophysiology. Small bilateral pleural effusions were seen on x-ray. CT revealed multiple right supraclavicular, anterior mediastinal, right paratracheal, and right hilar lymph nodes with calcifications. Pericardiocentesis: 500 cc of purulent-like milky fluid. Cytology was positive for neutrophils and lymphocytes, but cultures were negative. Lymph node biopsy: Purulent appearing, milky fluid; cultures and cytology negative, but triglyceride levels were positive. Excisional biopsy was negative for infection, but positive for large serpentine granulomas with caseating necrosis, consistent with KFD. The patient was discharged home in stable condition on colchicine and steroids. The etiology of chylopericardium is predominately idiopathic followed by trauma to or obstruction of the thoracic duct. The pericardial fluid is typically a milky, opaque fluid. Diagnosis: the presence of triglycerides greater than 500 mg/dL, negative cultures, and lymphocyte predominance on cytology.

Conclusions KFD is a self-limiting, idiopathic disorder, which typically resolves in weeks. Corticosteroids can be used in severe cases of extranodal or generalized KFD. Lymphadenopathy with marked inflammatory response results in injury to the thoracic duct with resultant obstruction leading to chylopericardium.

86 AN INSIDIOUS PRESENTATION OF AORTIC ROOT DILATATION

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10.1136/jim-2015-000035.86

Case Report A 68 year old female with a history of hypertension, bladder cancer status post cystectomy now with ostomy bag, and current smoker presented with acute on chronic dyspnea. She had been complaining of worsening shortness of breath over the past three months, with associated 2 pillow orthopnea, paroxysmal nocturnal dyspnea and intermittent pedal edema. She had a 3/6 systolic murmur over the right upper sternal border and bilateral crackles at the lung bases. Chest X-ray showed cardiomegaly and mild interstitial opacities. Electrocardiogram showed normal sinus rhythm with left ventricular hypertrophy and right bundle branch block. proBNP was 16716. Echocardiogram demonstrated moderate left ventricular hypertrophy with ejection fraction 50–55%. Aortic valve was thickened with preserved opening and moderate to severe aortic insufficiency. Left ventricular diastolic function was abnormal. CT showed aneurysmal dilatation of the ascending thoracic aorta. The patient was evaluated by Cardiothoracic Surgery and underwent median sternotomy with aortic valve replacement. There was aneurysmal dilatation of the ascending aorta up into the arch, and the hemiarch was resected and replaced. Follow-up echocardiogram showed well-seated aortic valve and ejection fraction 60–65%. The patient had a fairly uneventful recovery and was discharged to rehabilitation. Aortic root dilatation is often characterized by weakening of the aortic wall, secondary to cystic media degeneration as typically occurs with aging. Other causes should be considered. Among these are connective tissue disease such as Ehlers-Danlos and Marfans Syndrome. Chronic long standing hypertension is also associated with aortic dilatation as a result of elevated wall stress. Inflammatory processes such as Takayasu arteritis and Giant Cell Arteritis and infectious etiology such as tertiary syphilis, fungal and bacterial aortitis may be also be cited as the culprits of aortic root dilatation.

87 CENTRAL LINE ASSOCIATED THROMBUS VS VEGETATION

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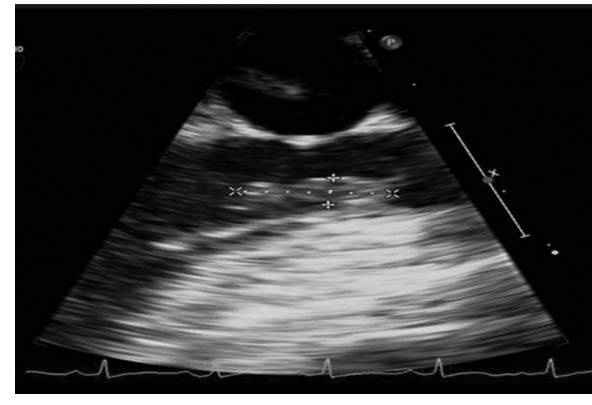
10.1136/jim-2015-000035.87

Case Report Introduction: Superior vena cava (SVC) thrombosis and bacteremia are common complications of indwelling catheters. In patients with bacteremia, it is challenging to differentiate SVC thrombus from vegetation based on noninvasive imaging techniques. This case aims to propose a strategy for management of SVC thrombus in the setting of bacteremia.

Case We present two patients with recently removed central venous catheters (CVC) found to have large echodensities in the SVC, by transesophageal echocardiography (TEE). Both patients presented with sepsis from *staphylococcus aureus* bacteremia and underwent TEE to evaluate for cardiac vegetations. They were treated with six weeks of intravenous antibiotics as well as anticoagulation with the recommendation to continue anticoagulation until repeat TEE confirmed resolution.

Discussion Management of CVC associated SVC thrombosis usually invloves removal of the associated catheter and anticoagulation. In the setting of sepsis and bacteremia, antibiotics are also indicated. The optimal duration of antibiotic therapy is unclear as it is difficult to determine if the thrombus is secondarily infected and should be treated like



Abstract 87 Figure 1 TEE image of a large mass at the junction of the right atrium and SVC

infectious vegetation. Our patients clearly had evidence of systemic infection which warranted antibiotic therapy. However, whether or not the SVC masses were infectious vegetation or thrombus was less evident. Due to the relatively low risk of well managed anticoagulation we felt that concomitant anticoagulation was indicated. Both patients underwent repeat TEE which showed complete resolution of the previous masses after six weeks of therapy.

88 "WIDOWMAKER" ATTACKING A FEMALE IN HER TWENTIES

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10.1136/jim-2015-000035.88

Case Report: Introduction Young females especially below 40 years old are usually overlooked when presenting to Emergency Department (ED) with chest pain. Their complaints will usually be attributed to gastrointestinal causes or other functional causes. We present a case of completely occluded proximal LAD in a young female in her twenties with high BMI, smoking and contraceptive use. Total blockage at the beginning of LAD is known as "Widowmaker".

Case Description A 20 years old female with BMI of 41 and long time smoker who also uses hormonal contraception complained of recurrent chest pain for 2 weeks. No Family history of premature CAD or drug abuse was noted. She went to the ED and was discharged home on prednisone and hydrocodone for suspicion of costochondritis. She presented again to ED 5 days later with severe chest pain radiating to the left arm and back with shortness of breath. Physical exam showed a young female in distress with tachypnea, soft S3 and decreased breathing on cardiopulmonary examination. While in ED, she developed ventricular tachycardia and required emergent defibrillation. EKG showed anterior ST elevation with inferior reciprocal changes. Emergent catheterization showed 100 % proximal LAD occlusion, 30 % RCA stenosis, severe antero-apical hypokinesia and 30% EF. DES stent was placed in LAD with excellent angiographic results and resolution of ST elevation. No intracardiac shunt was seen on bubble study 2 days after the heart catheterization. Hypercoagulability workup was negative and ESR on admission was normal which ruled out vasculitis as the cause. Her HgbA1c and lipid panel showed no diabetes or hyperlipidemia. Her symptoms improved after catheterization and she was discharged home on Aspirin, Effient, Lipitor and Lopressor.

Discussion Although coronary heart disease (CHD) primarily occurs in patients over the age of 40, younger men and women can be affected. Most studies have used a cut-off age of 40–45 years to define "young" patients with CHD or acute myocardial infarction (MI). There is limited data on the frequency of MI in young population. More studies are needed to raise the awareness of ischemic pain and coronary artery disease in young individuals especially females.

89 AN UNUSUAL CAUSE OF ACUTE HEART FAILURE

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10.1136/jim-2015-000035.89

Case Report Acute heart failure represents 15 - 20% of hospital admissions. Incidence in women is relatively low and acute heart failure in them poses unique diagnostic challenges.We describe an interesting case of a previously healthy female who presented with acute heart failure.

Case report A 49-year-old caucasian female presented with acute shortness of breath and productive cough of 5 days duration.She denied having fever, chills or chest pain.On examination, she had a feeble left radial pulse,a 50 mm systolic BP difference between the right and left arm,bruit below the left clavicle and bilateral pedal edema.Lab results showed elevated BNP (34,258 pg/ml) and Troponin(0.13). CXR showed bilateral pleural effusions,cardiomegaly and mediastinal widening.Echo showed severely depressed LV systolic dysfunction with ejection fraction of <20%,severe global hypokinesis and aortic regurgitation.CT chest showed several findings such as a 4.4×4.5 cm ascending aorta aneurysm, occlusion of multiple vessels - left subclavian,celiac, right renal artery and thrombosis of superior mesenteric artery. An irregular mural thickening of descending aorta suggestive of inflammatory arteritis/vasculitis was seen. Cardiac catheterization showed normal coronaries. Inflammatory workup showed elevated CRP at 2.2 with negative ANA and ANCA. She was diagnosed with Takayasu's arteritis (TA) based on the following ACR criteria - decreased brachial artery pulse, >10 mmHg difference in systolic pressure between the left and right arm, and angiographic evidence of narrowing/ occlusion of the aorta or its primary branches. She was started on high dose steroids with improvement in EF to 40% on follow up.

Discussion Takayasu's arteritis (TA) is a large vessel vasculitis seen mainly in Asian females. Incidence of TA in Caucasians is very low (0.8/1,000,000). Highlights of this case include the late onset (usual age of onset is<40 years) and initial presentation as acute heart failure, seen in <7%. We believe the heart failure is secondary to myocarditis as she had normal coronaries. Myocarditis is rarely reported in TA. High degree of clinical suspicion is needed for diagnosis due to rarity of the disease in caucasians and absence of specific biochemical markers, making early diagnosis of this disease difficult.

90 A RARE CASE OF DOUBLE-JOINTED PAPILLARY FIBROELASTOMA IMPLICATED IN A CEREBROVASCULAR EVENT

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10.1136/jim-2015-000035.90

Case Report: Purpose Albeit rare, primary left heart tumors have a high likelihood of systemic and cerebrovascular embolization. Of all cardiac tumors, papillary fibroelastoma (PFE) is the second most common; over 80% are found on the valvular surface of the left heart with 36% on the aortic valve. No case report has been published showing two attachment points of the same PFE.

Case Report A 42-year-old male with a history of hypertension and three transient ischemic attacks presented with increasing confusion of 3 days' duration. His wife noted he had become forgetful, did not recognize family members, and had an episode of garbled speech and disequilibrium.

Computed tomography showed age indeterminate lacunar infarct in the thalamus. MRI confirmed a subacute stroke in the left thalamus. On admission, transthoracic echocardiogram in the evaluation of his subacute stroke revealed a thin, linear, mobile density measuring 12 mm long in the LV outflow tract, likely attached to the non-coronary cusp of the aortic valve. Transesophageal echocardiogram showed the same 12 mm mobile density, however, it further defined two distinct attachment points on the ventricular surface of the aortic valve, which was highly redundant and prolapsed into the aorta during systole. There was no obstruction to flow by color Doppler. These findings were thought to represent an unusual variant of a subaortic membrane or PFE. Valve strand (Lambl's excrescence) or infectious vegetation were considered less likely based on appearance and location of the structure. Dissection flap was also unlikely given its appearance and lack of aortic regurgitation. The patient underwent cardiac surgery and the mass was successfully removed. It was confirmed to have attached to left and non-coronary cusps on the ventricular side of the aortic valve. Microscopic examination confirmed the mass to be a PFE.

Conclusions A rare case of a double-jointed, aortic valve PFE is presented and which was implicated in the pathogenesis of one or more embolic cerebrovascular events. Our case brings to light a unique mechanism of tumor attachment as well as highlights the dangerous nature of these non-malignant cardiac-related tumors.

91 CONGENITAL ABSENCE OF INNOMINATE VEIN: UNCOMMON ANATOMICAL FINDINGS AND IMPLICATIONS ON DEVICE PLACEMENT

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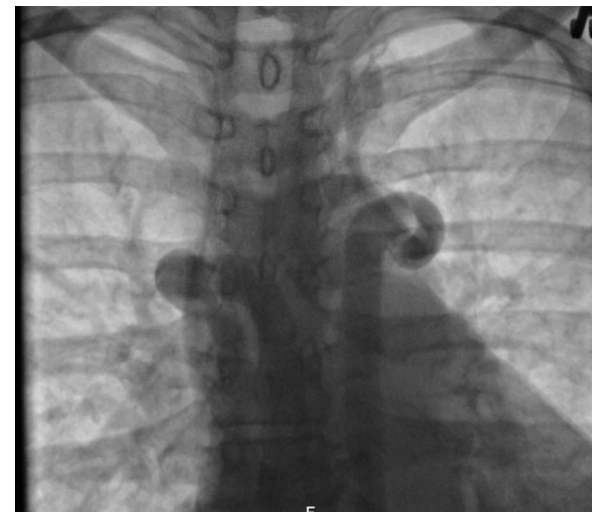
10.1136/jim-2015-000035.91

Case Report A 46 year old female with medical history of hypertension and CKD presented with lightheadedness and dizziness. EKG revealed sinus rhythm, 2:1 AV block, and narrow QRS complex. The patient underwent exercise stress EKG for evaluation AV nodal response to exercise, to distinguish between nodal or infra-Hissian block (IHB). Dyspnea and lightheadedness were reported during the study. Sinus rate increased appropriately, with relative increase in AV block, consistent with IHB. Dual chamber pacemaker (DCP) was inserted for symptomatic high grade AV block. The left axillary vein was cannulated, however a guidewire was unable to be advanced past midline. A venogram showed tortuosity of the left subclavian venous system (SVS) with drainage to the left brachiocephalic and a left hemiazygos vein. Contrast drained inferiorly down the hemiazygos vein before crossing below the diaphragm, across midline, then filling the azygos in a retrograde fashion, up to the right superior vena cava. (Figure 1) Right venogram revealed normal anatomy from the right SVS to right atrium. The DCP was implanted via the right axillary vein. Cardiac device lead and central venous catheter placement occurs commonly. Venous anomalies occur infrequently, with a prevalence of 0.3–0.5%. Congenital venous malformations are generally asymptomatic, but are associated cardiac abnormalities. Physicians should be mindful of venous anomalies while placing catheters or intracardiac leads. Identification of venous anomalies may help avoid additional unnecessary studies, procedures, and complications.



Abstract 91 Figure 1

92 SUPERIOR VENA CAVA SYNDROME IN THE SETTING OF WEIGHTLIFTING

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10.1136/jim-2015-000035.92

Case Report: Case A 28-year-old man with a history of hypertension presented with a 6 weeks of neck/face swelling that was worse in the mornings. His symptoms worsened acutely on the day of presentation. Over the prior months, he had associated rhinorrhea, post-nasal drip, increased snoring, and intermittent tongue swelling changing the way he talked but not causing difficulty breathing or swallowing. He denied any changes to his upper extremities. He denied weight loss, changes in appetite, or night sweats. He had no recent medication changes except for two and half months prior, he had stopped Lisinopril for possible angioedema. He did not smoke. He had a history of lifting weights, but denied using exogenous hormones. On exam he had a symmetric, edematous face and lips with nasal and oral mucosa and uvula, no stridor or wheezing, and a normal, muscular torso and extremities. He was found to have a normocytic anemia, low protein, and an elevated troponin. He was started on full dose enoxaparin and CPAP for supportive care in the ICU as he became hypoxic, tachycardic, and lethargic. Imaging showed extensive clots in bilateral subclavian veins, jugular veins, and the proximal superior vena cava. Cardiology performed thrombolysis and angioplasty; a 95% occlusion of the SVC was opened, a right subclavian stenosis of 70% was opened, and a left subclavian vein remained occluded but a robust collateral system draining the left arm was opened with tPA. The patient's swelling and associated symptoms were drastically improved. He was started on

rivaroxaban. A hypercoagulability workup was negative, and a PET scan was planned after discharge.

Discussion Superior Vena Cava (SVC) syndrome occurs when there is obstruction of the SVC from either compression or invasion externally or thrombosis internally. Common symptoms include facial swelling exacerbated by lying flat, dyspnea, and dysphagia. Malignancy, usually bronchogenic carcinoma, is the most common cause of and intravascular device is the most common benign cause. However, the patient's history may reveal another etiology that is less common. His history of body building may have caused a thoracic outlet syndrome leading to stasis in venous return.

93 WHEN TREATING SEIZURES CAN STOP ONE COLD: LACOSAMIDE INDUCED CARDIAC ARREST

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10.1136/jim-2015-000035.93

Case Report An 82yo woman with seizures, HTN and history of CVA was admitted for status epilepticus. Lacosamide 200 mg BID was added to her levetiracetam to break the seizures. She stabilized somewhat but required a slow wean from the ventilator, IV metoprolol and IV antibiotics along with the newly added lacosamide. A few days into her hospitalization she had a cardiac arrest due to third degree atrioventricular (AV) block. An external transcutaneous pacer was placed followed by a transvenous pacemaker. Her renal function was normal without any electrolyte abnormalities. Her baseline EKG showed PR interval 206 mm, right bundle branch block, left anterior fascicular block, and bifascicular block. Lacosamide-induced complete heart block was suspected and thus lacosamide was discontinued. Metoprolol was also discontinued. The patient recovered and her EKG returned to baseline without further similar incidents. She eventually had her transvenous pacer removed, was transferred to floor and was discharged to a nursing home in stable condition.

Discussion Lacosamide is a new antiepileptic drug available since 2009. Lacosamide selectively enhances slow inactivation of voltage-dependent sodium channels which results in stabilization of hyperexcitable neuronal membranes and inhibition of repetitive neuronal firing. Previous case reports have described reversible complete heart block at higher doses of lacosamide (600–800 mg/ day) in patients with renal failure or when used concomitantly with other AV nodal blocking agents (AVNBA). We report here a patient who developed reversible complete heart block on a normal maximum recommended daily dose of lacosamide (400 mg per day) who had a baseline abnormal EKG and was on a regular dose of metoprolol. After lacosamide and metoprolol were stopped, her EKG reverted to baseline without third-degree heart block. Our case demonstrates that if a patient has an abnormal baseline EKG and is on another AVNBA, even regular dose lacosamide (400 mg/day) can induce a third degree AV block. Thus, physicians are discouraged from using lacosamide in combination with other AVNBA in patients with known conduction problems. In addition, our case emphasizes the importance of a baseline EKG prior to starting lacosamide and vigilance for PR prolongation afterwards.

94 THE RELATIONSHIP BETWEEN QTC PROLONGATION AND VENTRICULAR ECTOPIC BEATS

P Valasareddy, R Bomb, DM Flatt, MR Heckle, E John, TE Kasprowicz, JM Cronin, JB Jasper, BZ Heard, KT Weber. *University of Tennessee Health Science Center, Memphis, TN*

10.1136/jim-2015-000035.94

Purpose of Study Ventricular tachyarrhythmias are a serious cause of inpatient and outpatient morbidity and mortality. Delayed myocardial repolarization with ECG evidence of QTc prolongation raises the propensity for ventricular arrhythmias. This study addresses the relationship between QTc prolongation and premature ventricular beats on the 12-lead standard ECG in an urban medical center patient cohort.

Methods Used Total number of 3202 patients who presented to Regional One Medical Center in Memphis, TN were evaluated for QTc prolongation. Of these patients, 2011 patients had a prolonged QTc, defined here as >440 msec. A standard 12-lead ECG was evaluated for the presence of premature ventricular beats (PVB). IMB SPSS v. 20.0 was used for statistical analysis. The study excluded patients on medications that can cause prolongation of the QTc interval.

Summary of Results A paired two-sample *t*-test was done with equal variances. A total of 2011 patients were evaluated with prolonged QTc in whom 154 had premature ventricular beats (PVBs). Combined analysis showed that patients with PVB had a mean QTc of (482.2±2.1 msec), which was 20.2 msec longer than patients without PVB (462.4±0.9 msec) ($p<0.001$).

Conclusions Prolonged QTc can be associated with increased ventricular ectopic beats which are a surrogate marker for more serious ventricular arrhythmogenesis. The results of this investigation suggest a direct relationship between PVB and prolonged QTc and emphasize the importance of QTc correction in the prevention of ventricular arrhythmias with their attendant morbidity and mortality.

95 QTc PROLONGATION WITH LVH CORRELATES WITH THE INCIDENCE OF VENTRICULAR ARRHYTHMIAS

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10.1136/jim-2015-000035.95

Purpose of Study QTc prolongation involves delayed repolarization of ventricular myocytes and is a known risk factor for ventricular arrhythmias. Additionally, underlying heart disease such as left ventricular hypertrophy (LVH), may impede electrical impulse propagation throughout the myocardium and impose a risk for ventricular arrhythmias. Herein we *hypothesized* that QTc prolongation with LVH will be predictive of ventricular arrhythmias.

Methods Used A retrospective chart review of 3202 patients with standard 12-lead ECG at an urban medical

center from Jan 1, 2014 to June 30, 2015 was performed of which 1524 patients met criteria for LVH with 936 patients having QTc >450 msec (61.4%). The presence or absence of ECG evidence of ventricular arrhythmias in patients with ECG criteria for LVH and QTc >450 msec was noted.

Summary of Results The number of patients with ventricular arrhythmias with LVH and QTc >450 msec was 17/902 (1.9%). The number of patients with ventricular arrhythmias with LVH and QTc <450 was 6/578 (1.0%). Using Pearson Chi squared analysis, a statistically significant difference ($p < 0.001$) in the incidence of ventricular arrhythmias in patients with ECG criteria for LVH and QTc >450 msec (17/902) versus patients with ECG criteria for LVH and QTc <450 msec (6/578) was found.

Conclusions Thus, our findings indicate the presence of LVH with QTc prolongation is associated with higher incidence of ventricular arrhythmias. It is therefore suggested that correction of QTc prolongation, specifically in patients with LVH, is advisable to avoid ventricular arrhythmias with potential associated morbid and mortal events. This includes avoidance of QTc prolonging medications and careful surveillance of correctible hypokalemia and hypomagnesemia.

96 ALIVECOR MOBILE ECG: POTENTIAL USES FOR MEDICAL EDUCATION, SERVICE LEARNING, AND PHYSICAL TRAINING

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10.1136/jim-2015-000035.96

Purpose of Study The AliveCor ((c) 2015 AliveCor, Inc.) Heart Monitor is an FDA-approved mobile ECG recorder that runs on iPhone and Android devices. It has demonstrated efficacy as a screening tool and as a monitor following atrial fibrillation ablation procedures. This study sought to explore these and other uses of the AliveCor device.

Methods Used The AliveCor device was incorporated into a second-year medical school curriculum, student-run service-learning clinics, and an individual physical training program. ECGs were recorded on the single-lead AliveCor device linked through radio transmission to the smartphone app. Templated and customizable tags and notes were assigned to each recording.

Summary of Results Between 24 May and 3 October 2015, 117 ECG recordings were made in these settings. In addition to screening and monitoring, investigators identified potential uses for the device pertaining to: (1) medical education - students were able to make and share recordings quickly without being proficient in the technical application or lead placement of traditional ECG; (2) service learning - the device was useful in free clinics, where patients often have compliance or transportation issues or lack insurance to cover a traditional ECG; and (3) physical training - the device was useful for meeting physical training guidelines, provided higher resolution during exercise than traditional exercise heart monitors, and was easier than traditional ECG stress-testing.

Conclusions In addition to established indications for screening and monitoring, the AliveCor device could be helpful in medical education, service learning, and physical training. Further systematic and quantitative study is needed to characterize the uses of AliveCor and its ultimate impact on cardiovascular health.

97 NEUROPSYCHOLOGICAL TESTING IN LARGE OBSERVATIONAL STUDIES OF CARDIOVASCULAR OUTCOMES

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10.1136/jim-2015-000035.97

Purpose of Study Increasing age is a risk factor for both cardiovascular disease (CVD) and cognitive impairment. Many population-based cohort studies focused on CVD risk factors and outcomes have administered neuropsychological tests to measure various domains of cognitive performance. To date, there has been no comprehensive review of the specific instruments in use, or the modalities of administration. Therefore, we sought to identify specific neuropsychological tests administered in large observational studies of CVD risks factors and outcomes, the testing modalities, and the implications of these choices.

Methods Used We searched the databases of the NIH using the Research Portfolio Online Reporting Tool (RePORT) and examined information from the NHLBI Biologic Specimen and Data Repository Information Coordinating Center (BioLINCC) to identify observational studies of one or more CVD outcomes, excluding a focus on stroke alone, which measured cognitive performance. We examined data dictionaries, protocols, manuals of operations, publications, and study websites to determine which neuropsychological tests were administered.

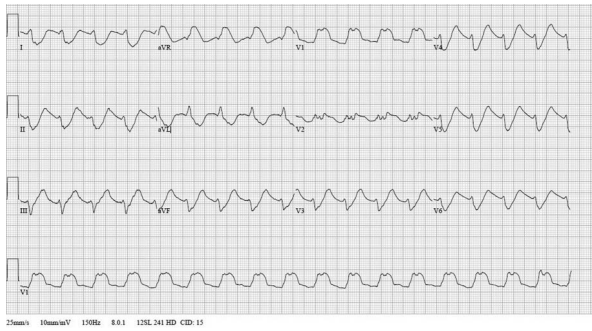
Summary of Results Neuropsychological testing was conducted in 15 studies (7 from BioLINCC) out of the 65 identified (21 from BioLINCC). The most common tests among studies were the Digit Symbol Substitution Test (DSST) (7/15), the Mini Mental Status Exam (MMSE) (6/15), and the Stroop (5/15). None of the studies identified by our search used an entirely computer-based instrument, such as the CANTAB. In addition to the DSST, MMSE, and the Stroop, multiple studies administered the Word Fluency test (3/15), the Trail Making Test (2/15 for Part A, 2/15 for Part B), and the Delayed Word Recall Test (2/15).

Conclusions Our findings indicate that the most common domains of cognitive performance tested in large observational studies of CVD outcomes include executive functioning and processing speed. Despite the ease of computer-based testing, instruments such as the CANTAB, are not widely used.

98 CARDIOGENIC SYNCOPE DUE TO HIS-PURKINJE CONDUCTION DISEASE IN A YOUNG WOMAN WITH NO CARDIAC STRUCTURAL DEFECTS

J Samuel,[1] N Choudhary,[2] F Baidoun,[1] E Beuno,[1] P Antoun,[2] R Kim[2]. [1]*University of Florida-COM-Jacksonville, Jacksonville, FL;* [2]*University of Florida, Jacksonville, FL*

10.1136/jim-2015-000035.98



Abstract 98 Figure 1

Case Report Introduction Wide-complex tachycardia is a clinical challenge as urgent therapy is often required to prevent fatal outcomes. In young adults, it's a dilemma as generally there is no underlying structural heart disease. Here in, we present a case of a young woman who presented with syncope. The primary goal is to identify high risk features to prevent adverse outcomes. Case Report: A 21-year-old woman with PMH of crohn disease on infliximab and mesalamine presented with sudden onset of loss of consciousness lasting less than a minute with no fecal/bladder incontinence or post-ictal state. Physical exam was normal. The laboratory data didn't show any electrolyte abnormalities, urine drug screen was negative. ECG revealed a wide-complex ventricular tachycardia consistent with idioventricular rhythm. A repeat ECG showed 1st degree AV block and prolonged QTc. The transthoracic echocardiogram revealed normal cardiac structure and function. An EP study revealed abnormal His-Purkinje conduction (HV interval=80 ms) and sustained polymorphic ventricular tachycardia induced by programmed electrical stimulation at loose coupling intervals. Recommendations for further work up including cardiac MRI and implantation of cardioverter defibrillator and pacemaker were made but patient left against medical advice.
Discussion The causes of ventricular tachyarrhythmia in absence of cardiac structural defects, electrolyte and hormonal disturbances, alcohol abuse, inflammatory processes, and drug toxicities.
Conclusion Syncope in the setting of significant infrahisian conduction disease is associated with an increased incidence of sudden cardiac death. Permanent pacing is indicated in such patients.

99 SUPERIOR OPHTHALMIC VEIN THROMBOSIS: A RARE PRESENTATION OF NEPHROTIC SYNDROME FROM CLASS IV LUPUS NEPHRITIS

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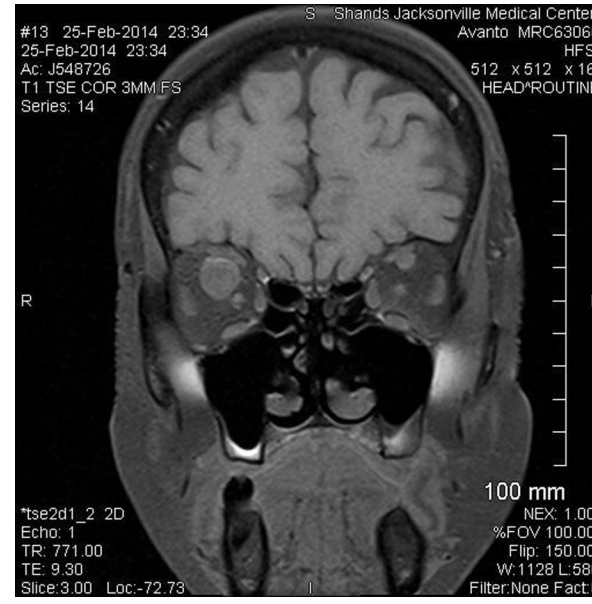
10.1136/jim-2015-000035.99

Case Report Our patient is a 62 year old African American female with no significant past medical history, who presented to the Emergency Department with abrupt right eye blindness. Initial workup showed a creatinine level of 4.0 and a protein to creatinine ratio of 16 grams. MRI of the orbits showed occlusive superior ophthalmic vein thrombosis (SOVT). Laboratory test results were remarkable for positive ANA, anti-Smith and anti-ds DNA along with anti Ro/SSA autoantibodies. Anti-phospholipid and anti-cardiolipin antibodies were negative. The renal biopsy revealed Class IV lupus nephritis. Superior ophthalmic vein thrombosis was treated with warfarin to a goal INR between 2 and 3 bridged with heparin. Class IV lupus nephritis and secondary Sjögren's syndrome were treated with intravenous cyclophosphamide with hydroxychloroquine 200 mcg twice daily and pulse dose steroid. The patient recovered with complete return of her vision and substantial improvement in proteinuria to less than 2 grams per 24 hours.



Abstract 99 Figure 1 Brain MRI

Discussion The cause of this thrombosis was likely the hypercoagulable state acquired from anti-thrombin protein and protein S loss as part of nephrotic range proteinuria. Orbital imaging with MRI is the gold standard for the diagnosis of this problem.
Conclusion SOVT from nephrotic range proteinuria due to class IV lupus nephritis in the absence of anti-phospholipid syndrome is a rare phenomenon. If left untreated SOVT can lead to permanent blindness.

Endocrinology and Metabolism
Joint Plenary Poster Session and Reception
4:00 PM
Thursday, February 18, 2016

100 GYNECOMASTIA IN A MAN TREATED WITH CLOMIPHENE CITRATE

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10.1136/jim-2015-000035.100

Case Report: Background Clomiphene citrate is used extensively for the induction of ovulation in females with

Abstract 100 Table 1

	1/ 2014	6/ 2014	9/2014
LH	18.8	16.7	9.2 mIU/ml (1.3–10.5)
FSH	23.0	8.8	8.7 mIU/ml (1.5–12.4)
Estrogen	185	124	183 pg/ml (40.0–115)
Estradiol	–	–	53 pg/ml (7.6–42.8)
Testosterone, Total	1427	1328	1185 ng/dL (250–1100)
Testosterone, Free	139	7.5	15.8 pg/mL (8.7–25.1)
			MRI-Unremarkable Sella, no enhancing pituitary mass
			Surgical Pathology-Gynecomastia, negative for atypia or malignancy

PCOS and other causes of infertility. Some studies have also demonstrated beneficial effect in males with hypogonadotrophic hypogonadism and adolescents with gynecomastia. However, gynecomastia is not a well known side effect of this agent; we hereby report a case of gynecomastia in a young man treated with clomiphene.

Case Presentation A 38 year old male presented to our clinic with a 7 year history of hypogonadism treated with clomiphene citrate for 4 years; he had been treated with parenteral testosterone which was discontinued after he developed testicular atrophy. Before presentation he was noted to have elevated testosterone and estrogen levels by his primary care provider. At time of presentation to our clinic he was taking Clomiphene Citrate 200 mg daily and was also taking anastrazole 1 mg daily which was added after he developed painful breasts. We discontinued clomiphene and anastrazole and followed him up clinically and biochemically (see Table). Progressive painful gynecomastia developed several months after presentation for which he eventually required surgical excision.

Discussion Gynecomastia in this man is most likely the effect of hyperestrogenemia. High level of testosterone due to elevated LH induced by prolonged clomiphene therapy would be aromatized to estrogen. Discontinuation of anastazole, an aromatase inhibitor may have contributed to persistence of hyperestrogenemia that would have influenced the development of gynecomastia. Elevated gonadotrophin levels is consistent with the effect of clomiphene on the hypothalamo-pituitary axis but should raise suspicion of gonadotropinoma with testitoxicosis.

Conclusions Long term clomiphene therapy may be associated with gynecomastia in men with hypogonadotrophic hypogonadism.

101 AN UNUSUAL CASE OF NON-PITUITARY ACTH-DEPENDENT CUSHING'S SYNDROME

MC Chiang, F Mushtaq, T De Silva, R Richards. *LSUHSC, New Orleans, LA*

10.1136/jim-2015-000035.101

Case Report Extra pulmonary small cell carcinomas are rare malignancies with poor prognoses. Our patient, a 58 year old gentleman with a 25 year history of HIV on HAART therapy and CKD, was admitted with acute renal failure, hypokalemia, and severe metabolic alkalosis. He was in his usual state of health until 6 weeks prior to the admission. At that time, he developed HTN and acute fluid retention with edema of the lower and upper extremities. He reported proximal muscle weakness, fatigue, and edema of the hands and feet. The patient was admitted for acute kidney injury. On admission, his creatinine was 5.6 mg/dL. He also was noted to have hypokalemia (2.3 mmol/L) and a metabolic alkalosis. Morning cortisol was elevated (>110 mcg/dL). Cortisol levels did not suppress with either 1 or 8 mg dexamethasone suppression testing. ACTH levels were extremely high (1585 pg/mL). Further evaluation showed hepatic lesions suggestive of possible diffuse metastases as well as a right, enhancing perirectal soft tissue mass, likely representing a perirectal neoplasm. Patient underwent liver and rectal biopsies. Pathology reported a metastatic, high-grade neuroendocrine small cell carcinoma with Ki-67 greater than 95%, indicating an extremely aggressive tumor. Multiple treatment options were considered, but all were problematic because of hepatic dysfunction, kidney failure, and sepsis. The patient's immunity was severely compromised by the high cortisol levels in addition to the HIV-related immunosuppression. Furthermore, he was not a candidate for myelosuppressive chemotherapy or surgery due to ongoing infections, pancytopenia, and performance status. A negative octreotide scan precluded treatment with radioactive octreotide. Poorly differentiated extra pulmonary small cell carcinoma is a particularly rare subtype of neuroendocrine tumors that account for<1.0% of gastrointestinal tumors. These tumors have an overall survival of 2 to 43 months. This case highlights the difficulties in identifying, diagnosing, and treating aggressive neuroendocrine tumors.

102 PRECOCIOUS PUBERTY IN A PATIENT WITH TRISOMY 21

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10.1136/jim-2015-000035.102

Case Report Van Wyk-Grumbach syndrome (VWGS) is a rare condition in which primary hypothyroidism causes precocious puberty and growth delay. The first case of Trisomy 21, hypothyroidism, and precocious puberty was described in 1960. This triad is rarely documented in the medical literature. We describe a patient with Down syndrome who presented with premature menarche and was diagnosed with severe hypothyroidism and precocious puberty. A 6 year-old female with Trisomy 21 presented with vaginal bleeding for one day, a one month history of breast and labial enlargement, and abdominal distension. Her ROS was positive for constipation, coarsened hair, and fatigue. Her exam revealed dry skin, thinning hair, and a distended abdomen with a large, left palpable mass. Her breasts were Tanner 2. There was no pubic hair, but the labia majora were enlarged with estrogenized vulvar tissue. Diagnostic workup showed an elevated TSH (>500 UIU/mL) and undetectable free T4 with increased gonadotropins. Imaging revealed pituitary gland hyperplasia and bilateral ovarian cysts, with a large and multiloculated left

ovarian cyst. Although rare, long-standing hypothyroidism may present with precocious puberty. Van Wyk-Grumbach syndrome is characterized by isosexual precocity, high levels of TSH, ovarian cysts, and delayed bone age. Female patients present with breast enlargement and vaginal bleeding; males develop testicular enlargement without virilization. While the exact pathophysiology of VWGS is not known, there is likely activation of FSH receptors by elevated TSH levels. Replacement of thyroid hormone treats the hypothyroidism and the precocious puberty. After thyroxine was initiated in our patient, her endocrine abnormalities and ovarian cysts significantly improved. The incidence of thyroid dysfunction in Down syndrome patients is high, and this case highlights the importance of annual thyroid screening. Considering hypothyroidism in patients who present with precocious puberty is also important. Early recognition and treatment of Van Wyk-Grumbach syndrome in females results in avoidance of unnecessary ovarian surgery, improved height, and symptom regression.

103 SPONTANEOUS REMISSION OF UNILATERAL GRAVES'S ORBITOPATHY IN INTERFERON BETA-INDUCED EUTHYROID GRAVE'S DISEASE

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10.1136/jim-2015-000035.103

Case Report A 41 year old male with diabetes mellitus type 2, multiple sclerosis (MS), and schizophrenia presented with swelling of the right eye over 8 months and diplopia. His MS was treated with interferon-beta for a total of 7 years. He had no history of optic neuritis and noted right-sided weakness secondary to progressive MS, confining him to a wheelchair. Physical exam revealed stable vitals, exophthalmos of the right eye with positive convergence defect at 30 mm, diffuse thyromegaly with no audible bruits, and profound right-sided weakness. TSH was 0.44 mIU/dL, free T4 was 1.24 ng/dL (0.75–2.45), TSI was 356 U/mL (0–139), and TPO 10 U/mL(0–34). Thyroid ultrasound demonstrated thyromegaly with no increased vascularity. I-123 thyroid uptake and scan showed 6 hr uptake of 5.7% and 24.8 hr uptake of 19.3%. Head CT and MRI of the brain noted hypertrophy of extraocular muscles with the medial rectus, lateral rectus, and inferior rectus measuring 7 mm and the extraocular muscles of the left eye measuring 3 mm. The radiologist recommended evaluating the patient for orbital pseudotumor due to the uncommon presentation of unilateral Grave's Orbitopathy (GO). The patient was evaluated by ophthalmology and found to have proptosis and lid retraction.The diagnosis of GO was confirmed. However, the plan to proceed with orbital decompression and ethmoidectomy was cancelled secondary to patient hospitalization for depression. On follow up with ophthalmology, it was decided that observation was best as the patient no longer complained of diplopia and his optic nerve was not compromised. Repeat MRI one year later noted an abrupt decline in hypertrophy of the right extraocular muscles to 5 mm.The patient did not receive medical or surgical intervention during his course. Rundle's curve notes that GO has a severe initial phase that peaks, but eventually improves and reaches a stable plateau. Spontaneous remission of GO is most common with mild disease. With unilateral disease one should consider other diagnoses such as orbital pseudotumor, orbital cellulitis, cavernous sinus thrombosis, or intraorbital neoplasms. However, unilateral GO has been noted in patients with mild or euthyroid GD.

104 PAIN OUT OF PROPORTION TO EXAM NOT ALWAYS ISCHEMIA

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10.1136/jim-2015-000035.104

Case Report: Case A 60 year old woman with a past medical history of hypertension, type 2 diabetes with diabetic retinopathy, and glaucoma presented with abdominal pain, nausea, vomiting, 3 days of diarrhea and 1 day of confusion. At presentation, she was hypothermic 90.5oF, BP 80/40, RR 30, and HR 44; she required aggressive fluid resuscitation, blood products, vasopressor support and intubation. Initial blood glucose was 108 mg/dl, VBG showed pH <6.9, C02 5 mmol/l, lactate acidosis 19.5 mmol/l, elevated ammonia 330 umol/l, C-reactive protein 0.67 mg/dl, BNP 813 pg/ml, troponin 0.03 ng/ml, hyperkalemia 5.3 mmol/l, and acute renal failure with a creatinine 8.3 mg/dl (baseline ~2). A CT scan of the abdomen revealed bowel edema concerning for mesenteric ischemia. Given the severe lactic acidosis and abdominal pain, the patient underwent exploratory laparotomy which was unremarkable. She was transferred to the ICU where sustained low efficiency dialysis (SLED) was initiated for the severe acidosis and renal failure. She required nicardipine briefly after she was taken off of the vasopressor and required antihypertensive medications throughout the remainder of her hospital course. The patient unexpectedly developed atrial fibrillation (AF) with RVR which spontaneously converted. Cardiac echo showed biatrial enlargement, however cardiology felt that her AF was secondary to profound acidemia. She remained in normal sinus rhythm after SLED. On hospital day 7, her creatinine peaked at ~4.3 mg/dl and remained stable.

Discussion Lactic acidosis is the most common cause of metabolic acidosis in the hospitalized patient. Metformin induced lactic acidosis occurs in approximately nine cases per 100,000 person-years of exposure and has a high mortality rate of approximately 50%. Per chart review, our patient was taking metformin despite her creatinine >2 mg/dl for at least three months prior to admission. Our patients metformin level was found elevated prior to SLED. We believe our patients lactic acidosis was primarily due to metformin use in the setting of progressing chronic kidney disease. The current contraindications for metformin use include: impaired renal function, concurrent liver disease, acute heart failure, hemodynamic instability (i.e., sepsis) or past history of lactic acidosis.

105 A PATIENT WITH A HISTORY OF SEIZURE DISORDER PRESENTS WITH A 2-YEAR HISTORY OF UNCONTROLLED SEIZURES ASSOCIATED WITH HYPOGLYCEMIA

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10.1136/jim-2015-000035.105

Case Report A 35 year old female with a seizure disorder since 2005 presented with hypoglycemia and uncontrolled seizures. Since 2013, a number of seizures were associated with severe hypoglycemia and neurologic workup was negative. In early 2015, the patient presented to her primary care doctor with a chief complaint of low blood sugar after using her mother's glucose meter. During the office visit, the patient became sweaty and shaky. Blood glucose was 31. She was sent to the ER and further questioning revealed multiple hypoglycemic episodes over the previous 8 months. Endogenous hyperinsulinism was confirmed; the patient met Whipple's triad while hospitalized. Laboratory results showed: glucose 36 mg/dL, insulin 24.6 (nl 2.6–24.9 μIU/mL), proinsulin 48.2, (nl 0.0–10 pmol), C-peptide 3.2 (nl 1.1–4.4 ng/mL), beta-hydroxybuterate 0.3 (nl 0.2–2.8 ng/mL), insulin like growth factor II 439 (nl 288–736 ng/mL), insulin antibodies <5 (nl <5 μIU/mL). CT with contrast of the abdomen revealed lesions in the pancreas, liver, and left lung hilum. Octreotide scan was positive in the same locations. Percutaneous needle biopsy of the liver lesion showed neuroendocrine tumor (NET) with positive insulin staining. Surgical pathology was consistent with NET with positive insulin staining in the liver and pancreatic tail specimens. The patient had progressive metastatic disease and is currently being managed with Diazoxide and Everolimus.

Conculsion Our patient had a 2-year history consistent with frequent, progressive hypoglycemia and neuroglycopenia. Her history is not uncommon; studies suggest that as many as 20% of patients diagnosed with insulinomas had been misdiagnosed with a neurologic or psychiatric disorder before the disease was recognized. Although the overall incidence of insulinomas is rare at ~4 new cases per million persons per year, this case emphasizes the need for detailed history taking and close monitoring in patients who present with recurrent atypical neurological symptoms and hypoglycemia.

106 MALIGNANT NEUROENDOCRINE TUMORS: A CASE OF HUMORAL HYPERCALCEMIA OF MALIGNANCY

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10.1136/jim-2015-000035.106

Case Report Humoral hypercalcemia of malignancy is a paraneoplastic phenomenon seen in squamous cell carcinoma. This is mediated by the production of Parathyroid hormone related peptide. PTHrp shares the same N-terminal as parathyroid hormone and binds to the same receptor, Type 1 PTH receptor, increasing bone resorption and calcium reabsorption in the distal tubule. Pancreatic neuroendocrine tumors (NETs) are uncommon malignancies, and rarely, can produce PTHrP. Here we report a case of these tumors. A 60 year old woman with a history of well-differentiated neuroendocrine tumor of the distal pancreas and metastatic liver NETs presented to transplant surgery. Four years prior she underwent distal pancreatectomy but surveillance discovered a new pancreatic head mass with a biopsy concerning for adenocarcinoma. CT scan revealed the head mass and progression of liver mets in size, the largest 2.7 centimeters. She underwent pancreatectomy and superior mesenteric vein reconstruction. Pathology revealed a poorly differentiated invasive ductal adenocarcinoma. Resection of two liver mets histologically confirmed neuroendocrine tumors. The NETs appeared non-functional without evidence of multiple endocrine neoplasia. Thirty one days later after a long surgical course the patient became hypercalcemic. Her calcium rose to 13.7 and she developed anorexia, nausea, vomiting and severe lethargy with exam findings of dehydration. PTH was suppressed at 6 pg/ml and vitamin D was low at less than 13 ng/ml. PTHrP levels were drawn and elevated at 5.9 pmol/l. She was started on high rate normal saline. The next day there was no improvement with worsening of the patient's confusion, thus she received 4 mg of zoledronic acid and ergocalciferol. Her calcium level steadied at 12 for five days before returning to normal. The patient's mental status markedly improved and her appetite returned. Her calcium level did drop below normal, but returned to normal with oral calcium and ergocalciferol. She was started on subcutaneous octreotide therapy and later discharged. Humoral hypercalcemia of malignancy from PTHrP hypersecretion, despite its rareness in NETs, should be considered in the differential diagnosis of hypercalcemia and disproportionately low PTH.

107 THYROTOXICOSIS INDUCED HYPERCALCEMIA

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10.1136/jim-2015-000035.107

Introduction Hypercalcaemia is infrequently associated with thyroid disease and is only known to cause relatively mild hypercalcemia.We present a rather unusual case of pronounced symptomatic hypercalcemia as a consequence of thyrotoxicosis alone.

Case A 60 years old female with history of hyperthyroidism presented to the hospital with complaint of generalized weakness,tremor, palpitation, intractable nausea and vomiting for 3 weeks duration. On presentation patient was cachectic appearing,hypertensive (155/95) while EKG showed sinus tachycardia (135). Lab examination revealed hypercalcemia (12.3 mg/dL), suppressed TSH (0.01 mlU/L) and PTH (6 pg/ml). Free T4 and T3 were elevated at 85 pmol/L and 325 pmol/L respectively. TSH receptor and thyroid peroxidase antibodies were negative while routine renal and hepatic function showed no acute abnormality. Futher work up revealed normal protein electrophoresis, immunoglobulins, serum free light chains, 25-OH vitamin

D. CT chest and abdomen failed to exhibit any abnormality. On further questioning, patient had stopped taken Tapazole a month prior to her admission in preparation for an outapaitent I-123 thyroid scan. she was restarted on Tapazole and treated with intravenous fluids, furosemide and pamidronate. Her symptoms progressively improved with resolution of hypercalcemia. She was subsequently scheduled for thyroid ablation and was maintained in an euthyroid state on levothyroxine.

Discussion Symptomatic hypercalcemia is an uncommon manifestation of thyrotoxicosis. Hypercalcemia in hyperthyroidism is usually a mild and asymptomatic. The most common cause of hypercalcemia in the setting of hyperthyroidism is concomitant primary hyperparathyroidism. Our case is unusual in that the patient demonstrated a significant degree of hypercalcemia secondary to hyperthyroidism alone. Primary hyperparathyroidism as other secondary causes of hypercalcemia were excluded. Hypercalcemia is thought to be primarily mediated through the effects of thyroid hormone on bone resorption resulting in increased bone turnover. Hospitalized patient need aggressive medical therapy in an effort to convert patient back to a euthyroid and calcemic state. Hypercalcaemia in thyroid disease occurs infrequently, but should always be considerable etiology as symptoms tend resolves once the hyperthyroidism is treated.

108 METHIMAZOLE INDUCED AGRANULOCYTOSIS IN A PATIENT WITH GRAVE'S DISEASE MANAGED BY TOTAL THYROIDECTOMY

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10.1136/jim-2015-000035.108

Case Report Agranulocytosis is an extremely serious, although rare adverse effect of antithyroid drugs (ATDs), including methimazole (MMI) and propylthiouracil (PTU), in children and adolescents. It usually develops within the first 90 days of therapy initiation in most cases, but can occur much later. Use of low-dose MMI is thought to reduce the risk of agranulocytosis. Treatment with granulocyte colony-stimulating factor (GCSF) decreases the time of recovery in patients with agranulocytosis. Patient KT is a 17 year old girl with Grave's disease presented to the ED for headache, weakness, tremors, sore throat and diarrhea. Her Grave's disease was managed with 15 mg of MMI at diagnosis. She was taken off MMI for an uptake scan, but developed symptoms of thyroid storm necessitating restarting MMI 30 mg q8 hours and other medications to control her symptoms. She improved clinically and biochemically resulting in reduction of her MMI dose to 15 mg daily. Approximately one month later, she developed sore throat, fever, palpitations and diarrhea. Complete blood count demonstrated WBC 790/mm^3, with an absolute neutrophil count of 65 consistent with neutropenia. Thyroid functions showed TSH <.004 mIU/L with a free T4 level of 1.8 ng/dL. She was admitted with severe neutropenia, fever and concerns for thyroid storm. MMI was discontinued. While admitted her absolute neutrophil count dropped to 0. GCSF was started on day 3 of admission at the dose of 2 mcg/kg for 1 day followed by 5 mcg/kg for total of 5 days. Due to prior symtpoms post RAI uptake scan and bone marrow suppression secondary due to MMI, the decision was made to proceed with surgery for long-term management of her Grave's disease. She underwent total thyroidectomy after treatment with lugol's iodine. Throughout the procedure she did not experience any tachycardia, hypertension, or hyperthermia. She remained stable in the postoperative period with no symptoms of thyroid storm and was discharged home with no further complications.

Abstract 108 Table 1 Time course of laboratory data

Day of admission	1	2	3	4	5	6	7	8
Absolute neutrophil count (cells/μL)	63	52	12	0	0	72	210	522
Free T4 (ng/dL)	1.8	1.8	2	2.5	3.3	4.5	3.7	3.3
Thyroid stimulating hormone (mIU/L)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004

Gastroenterology
Joint Plenary Poster Session and Reception
4:00 PM
Thursday, February 18, 2016

109 NINE-YEAR INCIDENCE OF HOSPITAL-ONSET CLOSTRIDIUM DIFFICILE INFECTION IN PEDIATRIC PATIENTS AT UNIVERSITY OF SOUTH ALABAMA CHILDREN AND WOMEN'S HOSPITAL

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10.1136/jim-2015-000035.109

Purpose of Study Since 1997, the incidence of C. difficile infections (CDIs) in hospitalized pediatric patients has been increasing across the United States. The North American pulsed field type 1 (NAP1) is an epidemic toxin-producing C. difficile strain, which has recently emerged, possibly implicating this recent change. The primary objective of this study was to determine the incidence of hospital acquired CDIs in the pediatric patients at USACWH. The second objective was to determine whether the length of stay (LOS) of those patients correlated with acquiring CDIs. Lastly, we wanted to ascertain whether any of the patients' co-morbidities increased their susceptibility to acquiring CDIs.

Methods Used Retrospective review of pediatric inpatient and PICU patients (1 to 18 years of age) admitted to the USACWH between 2006 and 2014 and diagnosed with

CDI or given the icd-9 code diagnosis 008.45 during their hospital stay. Data was collected and then descriptive data analysis and Pearson correlation coefficient (r) were used.

Summary of Results Of 107 identified pediatric CDIs, 27% were hospital-onset (HO) CDIs, 10% were community-onset hospital-associated (CO-HA) and 40% were community associated (CA). Amongst the HO CDIs, the median age was 5.5 years (IQR, 2.94–15.25 years). The cumulative incidence of HO CDIs was increasing over the past 9 years (r=0.62); highest in 2012 (277 per 100,000). Those who had C. difficile testing later in their hospitalization (after 7 days) had a longer LOS (38 days [IQR, 19.5–77 days] vs. 11.5 days [IQR, 9.5–16.25 days]) compared to those who had earlier testing (3–7 days), suggesting a hospital dose-response effect. 38% of HO CDIs occurred in patients between 1–3 years of age whereas only 4% occurred in those between 13–15 years of age. Approximately 1 in 4 patients with HO CDIs had cancer and 1 in 3 had co-morbid GI disease. Antibiotic use prior to admission and PPI use during hospital stay was documented in 45% and 14% of HO CDIs, respectively. 62% of admissions due to recurrent CDI were initially hospital acquired.

Conclusions Over the past nine years, the incidence of HO CDIs has been increasing. The longer the LOS, the higher the risk of acquiring HO CDIs. Cancer and GI disease were the most significant comorbidities in patients with HO CDIs.

110 POLYARTHRITIS AS A PRESENTING SYMPTOM OF GASTROINTESTINAL LYMPHOMA

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10.1136/jim-2015-000035.110

Case Report Arthritis can be a manifestation of systemic disease, but polyarthritis as a presenting symptom of non Hodgkins lymphoma (NHL) without any skeletal involvement is rarely described in literature. We present a case of jejunal lymphoma presenting as atypical polyarthritis in elderly male with chronic iron deficiency anemia. Only five cases of NHL presenting as polyarthritis have been described in literature to our knowledge.Lymphomas arising from the bone and those infiltrating synovial membrane can mimic classical rheumatoid arthritis. Presence of lymphadenopathy or hepatosplenomegaly may be a clue in patients with disproportionately severe constitutional symptoms, but our patient did not have these signs. Radiographs are not of much help as lytic lesions may be misread as erosions seen in rheumatoid arthritis. Our patient had atypical presenting symptoms as he did not have any morning stiffness, involvement of different joints at different times, and had only modest response to high dose of steroid and inflammatory drugs.Synovial fluid analysis was also non-diagnostic except for inflammatory arthritis. Presence of iron deficiency anemia and occult gastrointestinal bleed helped in approaching the diagnosis. Location of the mass which was unapproachable through upper gastrointestinal endoscopy and colonoscopy lead to delay in diagnosis. We emphasize that malignancies should be ruled out in unexplained arthritis especially if joint pattern is not characteristic of any particular arthritis, pain is out of proportion to clinical signs, poor response to conventional antirheumatic treatment and when laboratory analysis doesn't point towards a diagnosis. Corticosteroid administration before a particular diagnosis can mitigate symptoms and negatively affect the prognosis of malignancy as it may increase the time to diagnosis.

111 CHICKEN WITH A SIDE OF ESOPHAGEAL PERFORATION

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10.1136/jim-2015-000035.111

INTRODUCTION Esophageal perforation is a condition with high rates of morbidity and mortality. Non-operative management, although not the mainstay of treatment, is becoming increasingly popular. Here we present a case of esophageal rupture treated with medical management.

CASE A previously healthy 30 year old male presented to the Emergency Department with a "piece of a chicken breast" lodged in his esophagus. He had dysphagia to oral secretions, and he had attempted multiple times to manually induce regurgitation of the food bolus. He denied hematemesis, but he was able to expel some of his saliva. His vitals were stable, and his physical exam was unremarkable. The only significant lab finding was leukocytosis of $23.6\times10^3/\mu l$. X-ray of the neck was unremarkable. Emergent endoscopy was performed, and the large food bolus was removed using a Roth net. A 10 cm linear tear was noted above the food bolus. After the procedure, subcutaneous crepitus was appreciated. Computed tomography scan and X-ray showed extensive pneumomediastinum which extended into the neck, thorax, and abdomen. The patient was monitored in ICU, kept NPO and started on vancomycin, cefepime, and metronidazole. Daily chest x-rays were obtained to evaluate for complications. On day 3, gastrograffin and barium swallows showed no leaks. By day 5 the patient was tolerating liquids, and by day 6 the patient was discharged on a soft diet, a proton pump inhibitor, and oral amoxicillin/clavulanate. The patient remained stable throughout his stay without identified complications.

Discussion The case demonstrates the importance of early recognition of emergent esophageal pathologies and the utility of medical management for esophageal perforation. Patients may be candidates for medical management if the leak is contained within the neck or mediastinum, minimal symptoms are present, and there are no signs of sepsis. Current treatment recommendations are not well established but include an NPO diet for minimum of 7 days, broad spectrum IV antibiotics for 7–14 days, total parenteral nutrition as needed, and repeated contrast study to ascertain progress of treatment.

112 CUTANEOUS METASTASIS OF COLORECTAL CARCINOMA; A RARE PRESENTATION

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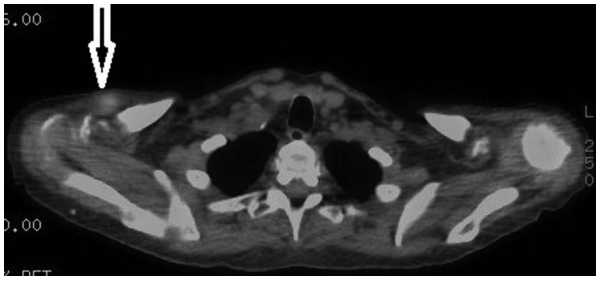
10.1136/jim-2015-000035.112

Case Report Cutaneous presentation of internal malignancy is a rare phenomenon. It arises in only 0.001 % of all skin biopsies performed. Of these presentations, only 6.5 % are due to Colorectal carcinoma.We present a case of a patient with multiple tender skin nodules arising due to cutaneous metastasis of colorectal adenocarcinoma. A 78 years old male with past medical history of previously diagnosed T3 partially obstructing colon adenocarcinoma of hepatic flexure complicated with mycotic aortic aneurysm status post right hemicolectomy, debridement and resection of mycotic aneurysm and aorto-femoral bypass came to see his oncologist with complaints of three small pea sized tender nodules on his right shoulder, left shoulder and abdomen which developed over a course of 2 weeks. Patient denied any fever and chills at home. On examination, he was found to have 1×1 cm tender red cutaneous nodule on the right clavicle, 1×1 cm tender red cutaneous nodule just below left clavicle and 1×2 cutaneous tender nodule in left upper quadrant of abdomen. A fine needle aspiration biopsy was performed and biopsy report came back consistent with mucinous adenocarcinoma. Patient also underwent PET scan to find other internal metastasis which showed hepatic metastasis and cutaneous metastasis in above mentioned areas. Patient was started on chemotherapy. Cutaneous manifestation of colorectal carcinoma is a rare presentation. Most of the case presentations have been reported to be as painless flesh coloured nodules.Usually, cutaneous metastasis from internal malignancy occurs after 5 years and is considered stage IV disease. These cutaneous manifestations can easily be misdiagnosed and confused with other dermatological diseases.



Abstract 112 Figure 1 PET scan showing metastatic nodule in right clavicular region

113 ENDOSCOPIC TREATMENT OF PANCREATIC PSEUDOCYST PRESENTING WITH JAUNDICE

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10.1136/jim-2015-000035.113

Case Report Jaundice in patients with pancreatitis may result from hepatocellular disease or obstruction of common bile duct. Obstructive jaundice due to pancreatic pseudocyst is rare. 64 year old male with history of biliary pancreatitis status post cholecystectomy 8 months ago presented with jaundice. On physical exam: scleral icterus and mild epigastric tenderness,vitals unremarkable. Lab data: CBC within normal limits, Total bilirubin 7.4 mg/dL, direct bilirubin 4.8 mg/dl, AST 422 IU/L, ALT 362 IU/L, alkaline phosphatase 500 IU/L, amylase 83 IU/L, lipase 390 IU/L. CT abdomen showed cystic structure in head of pancreas about 5.4×4.7 cm (Fig. 1) causing biliary obstruction and common bile duct measuring 1.4 cm. Subsequently Endoscopic Ultrasound revealed cyst with mature wall and no wall irregularities. 80 ml of fluid was aspirated from the cyst.Patient underwent ERCP(Endoscopic retrograde cholangiopancreatography), sphincterotomy and pancreaticogram which showed pancreatic leak. Patient underwent pancreatic and common bile duct stent placement (Fig.2). Fluid cytology was negative for malignancy. Patient improved clinically and biochemically. Pancreatic pseudocyst can be drained by percutaneous catheter, surgery or endoscopic (trans-papillary or transmural) route. There have not been any prospective randomized trials to directly compare these procedures. Although preferred approach varies depending on patient preference and local expertise, endoscopic drainage is favored if available due to least invasive and high success.

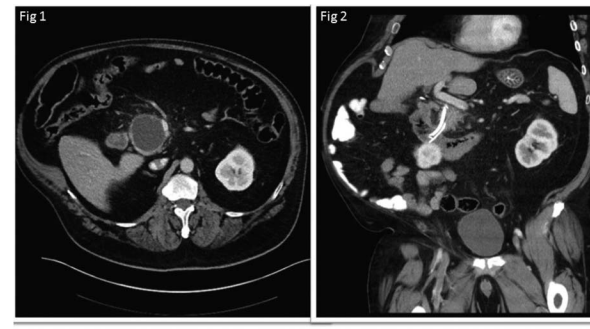

Figure 1: CT scan of abdomen showing 5.4 x 4.7 cm cyst in pancreatic head with mature wall and without mural nodule or wall irregularities.

Figure 2: CT scan of abdomen showing decreased size of pseudocyst with apprentice stent in common bile duct and pancreatic duct.

Abstract 113 Figure 1

114 TREATMENT OF SYMPTOMATIC GALLBLADDER AGENESIS: A PEDIATRIC CASE DISCOVERED PRIOR TO SURGERY

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10.1136/jim-2015-000035.114

Case Report Agenesis of the gallbladder is a rare congenital anomaly. Patients with gallbladder agenesis can be divided into three groups: symptomatic, asymptomatic, and patients with additional extrabiliary anomalies. Symptomatic patients frequently present with symptoms suggestive of biliary tract disease and therefore, the condition is often discovered intraoperatively. To avoid

unnecessary surgeries, gallbladder agenesis should be considered when the gallbladder is not visualized by routine imaging. Significant progress in radiology and widespread availability of noninvasive imaging techniques like computed tomography, and magnetic resonance cholangiopancreatography (MRCP) provide excellent alternatives prior to attempting laparoscopic cholecystectomy or laparotomy. Since the majority of patients undergo surgery, treatment of symptomatic patients prior to surgery is less well known. We present a pediatric case in which gallbladder agenesis was diagnosed after MRCP. Endoscopic retrograde cholangiopancreatography (ERCP) and surgery were not necessary. A 13yo Caucasian girl with history of asthma, presented with intermittent epigastric pain. During hospitalization, her pain radiated to her right scapula. In addition, she complained of nausea, vomiting (non-bloody, non-bilious), fatigue, and decreased appetite. The patient reported no fevers. On physical exam, the patient had no jaundice. She had vague abdominal tenderness to moderate palpation in the epigastric region and right upper quadrant, but patient had a negative Murphy's sign. Initial lab work showed urinalysis and complete metabolic panel within normal limits. The patient's mononucleosis screen was positive. Gallbladder was not visualized by abdominal ultrasound. MRCP was performed, which demonstrated absence of the gallbladder and slight hepatic enlargement. The patient was started on Hyoscyamine and was provided nutrition and diet education. This case highlighted the need for treatment recommendations outside of surgery when a patient presents with symptomatic gallbladder agenesis. The patient's mononucleosis complicated the evaluation as mononucleosis can cause symptoms of hepatitis and cholestasis. The patient's symptoms resolved after treatment with a smooth muscle relaxant and diet changes.

115 PRIMARY PANCREATIC CARCINOID TUMOR WITH AN ATYPICAL CLINICAL PRESENTATION: A CASE REPORT

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10.1136/jim-2015-000035.115

Case Report Carcinoid tumors are neuroendocrine tumors that most commonly originate in the GI tract. Primary pancreatic carcinoid comprises only 0.55% of all carcinoid tumors. Carcinoid tumors can present with different symptoms depending on tumor location, hormone production, and presence of metastases. Common presentations include abdominal pain, obstructive symptoms, and symptoms related to hormone production, such as hypoglycemia, flushing, wheezing, and diarrhea. Atypical presentations have been reported with carcinoid tumors. Rare paraneoplastic syndromes associated with carcinoid tumors include malignant hypertension and neurologic syndromes such as sensory neuropathy. Carcinoid tumors arising in uncommon anatomical sites or presenting with atypical manifestations can lead to clinical confusion and delayed diagnosis. We report a case of primary pancreatic carcinoid with metastases that presented with sensory neuropathy and malignant hypertension. A 52-year-old African American female presented with a blood pressure (BP) of 231/117 and unilateral numbness and tingling in her left upper and lower extremities with an otherwise normal neurologic exam. The numbness resolved spontaneously prior to normalizing the patient's BP. After her BP was controlled, the patient experienced the numbness again, but now in the right hand. Admission and repeat CT and MRI of her brain were unremarkable. A chest x-ray incidentally revealed a pulmonary nodule. A subsequent chest CT revealed a lobulated hyperenhancing pancreatic mass. An abdominal MRI revealed several large lesions in the liver likely representing metastatic lesions. CT-guided biopsy of one hepatic lesion revealed an immunohistochemical diagnosis of carcinoid tumor. The urine 5-HIAA was markedly elevated, consistent with the diagnosis of carcinoid tumor. The described clinical case highlights two uncommon paraneoplastic syndromes associated with carcinoid tumor. This case and previous cases report that hypertension, as well as hypotension, can be associated with carcinoid syndrome. To the best of our knowledge, we report the first case in the literature describing a patient who presented with both malignant hypertension and sensory neuropathy as the presenting symptoms of carcinoid syndrome.

116 DYSPHAGIA LUSORIA

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10.1136/jim-2015-000035.116

Case Report Dysphagia is defined by difficulty or discomfort with swallowing and can occur with defects in any of the oral, pharyngeal, or esophageal phases of swallowing. An aberrant subclavian artery compressing the esophagus, termed dysphagia lusoria, is a rare cause of dysphagia. Although a majority of children with this anatomical variant will not experience symptoms, a few present with an inability to swallow, which can lead to nutritional deficiencies and failure to thrive in children. A 5-month-old female presented with poor growth and increased fussiness during feedings. Endoscopy was normal. With esophageal manometry, there was a midesophageal tonic pressure increase of 10 to 20 mm Hg, with superimposed phasic pressure increases 120 mmHg at the same frequency as the heart rate. A CT of the chest with contrast demonstrated a left aortic arch with aberrant right subclavian artery coursing posterior to the esophagus and medialization of the distal carotid arteries into the retropharyngeal space. These findings were diagnostic for dysphagia lusoria, which usually requires surgical intervention for correction in symptomatic individuals. An extensive work up of our patient revealed the presence of Krabbe disease. She received a gastrostomy tube to mitigate her feeding difficulties and was referred to hospice care. Patient was not referred to cardiovascular surgery given the prognosis of her genetic medical diagnosis. The gold standard for identification of dysphagia lusoria is angiography of the aortic arch and CT imaging of the chest. This case highlights the utility of esophageal manometry as a diagnostic technique.

117 SMALL INTESTINE ARTERIOVENOUS MALFORMATION: A JOURNEY OF DISCOVERY

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10.1136/jim-2015-000035.117

Case Report Gastrointestinal bleeding originating from the small intestine presents a challenging diagnostic dilemma for clinicians. A variety of radiographic and endoscopic modalities are available to aid in the localization of the hemorrhage. We describe a 17-year-old child with a remote history of occult upper intestinal hemorrhage that presented acutely with transfusion dependent upper intestinal hemorrhage. A technetium-99 m-tagged red blood cell scan (bleeding study) showed no evidence of bleeding. Computerized tomographic angiography (CTA) of the abdomen and pelvis was negative for vascular lesions. Upper and lower endoscopy was performed and showed no abnormalities on the upper and only gross blood on the lower. Video capsule endoscopy deployed during upper endoscopy showed a lesion in the proximal small bowel. Single balloon push enteroscopy was performed with identification of a polypoid arteriovenous malformation in the third portion of the duodenum. The lesion was tattooed during endoscopy. Surgical resection of the lesion was performed with primary duodenoduodenostomy. Pathologic examination confirmed the presence of a submucosal vascular malformation. This case demonstrates the variety of tools available to the clinician to aid in the diagnosis and treatment of occult gastrointestinal bleeding.

118 COLONIC SPIROCHETOSIS PRESENTING AS BRIGHT RED BLOOD PER RECTUM

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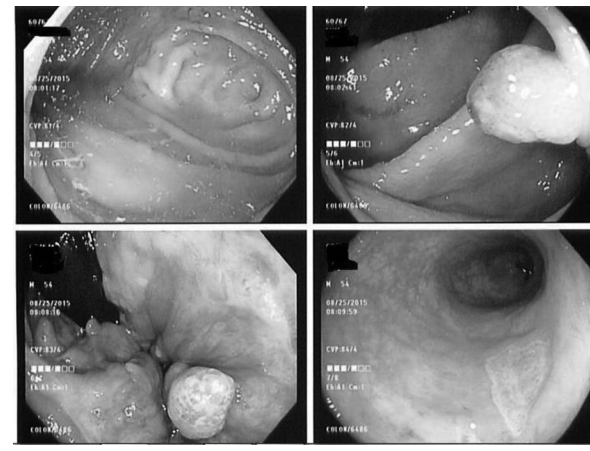
10.1136/jim-2015-000035.118

Case Report 54 YO CM with Pmhx of HIV CD4 550, Crohns, and hx of polyps with cc of BRBPR of one month duration for which he attributed it to his hemorrhoids. Pt c/o constipation and sharp rectal pain when he has a bm, ros otherwise wnl. Pe was unremarkable other than diffuse abdominal tenderness on deep palpation. CBC and CMP values where wnl. He had a colonoscopy 4 years prior which showed hemorrhoids, polyps, and proctitis. According to the pt he was treated for Crohn's for some time with Mesalamine, but has not required tx for 4 years. The pt underwent colonoscopy which showed hemorrhoids, rectal polyps, cecal polyps, rectal ulceration, and diverticulosis. Biopsy of the polyp was consistent with condyloma, random biopsy showed intestinal spirochetosis, biopsy of rectal ulcer showed chronic active proctitis with ulceration. He was started on Metronidazole improvements of sx. Intestinal spirochetosis is an infection of the colonic mucosa with Brachyspira pilosicoli, dx is based on histological confirmation. As it is anaerobic organism tx is metronidazole Pt at risk for developing this disease include HIV pts and specifically homosexual males. Sx vary from



Abstract 118 Figure 1

asymptomatic to fatal, sx include diarrhea, abdominal cramp, or as in our case BRBPR This case emphasis on the importance of confirming the dx based on pathology, rather than treating a pt for presumed IBD with steroids, potentially resulting in a fatal outcome Another emphasis is the importance of sexual history, as in this case pt's sex practices increases the chance of colonic spirochetosis

119 OGILVIE'S SYNDROME WITH HISTORY OF MULTIPLE MYELOMA

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10.1136/jim-2015-000035.119

Case Report: Introduction Ogilvie's Syndrome is an acute pseudo-obstruction of the bowel in the absence of mechanical obstruction. This rare acquired disorder results from abnormal intestinal motility due to autonomic nervous dysfunction. We report the second case of Ogilvie's syndrome in a patient with Multiple Myeloma.

Case A 56 year old man with history of Multiple Myeloma with bone lytic lesions on maintenance treatment with bortezomib, presented to his oncologist for routine follow up and was found to have hypokalemia. His only complaint was abdominal swelling that started 2 days prior to the clinic visit. Initial abdominal radiographs showed marked gaseous distention of small bowel and dilation of the ascending and transverse colon. Abdominal CT showed distended gas-filled loops of large bowel without evidence of mechanical obstruction or ischemia. He was diagnosed with Ogilvie's syndrome and his potassium was replaced aggressively. He improved following colonoscopy for bowel decompression with rectal tube placement. Following rectal tube removal, he had reoccurrence of dilated small bowel. The rectal tube was reinserted, followed by decompression with colonoscopy. He once again had recurrence of distention once the rectal tube was removed. Trial therapy with erythromycin, neostigmine and cecostomy tube provided short-term relief. During this time period, he had progression of his myeloma. His performance status deteriorated significantly and he was discharged home with home hospice and cecostomy tube for symptom relief.

Discussion Ogilvie's syndrome often responds to conservative management and treatment of underlying condition. Based on one prospective study, sustained and early response to neostigmine and association with non traumatic surgery were good predictors. Electrolytes imbalance and association with serious medical condition were poor predictors. In addition, Bortezomib has been associated with autonomic nervous dysfunction and paralytic ileus. Our patient had a prolonged refractory course with poor outcome most likely due to multi factorial etiology including progressive Multiple Myeloma treated with bortezomib.

120 WHEN ENOUGH IS ENOUGH-A CASE OF SERRATED POLYPOSIS SYNDROME

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10.1136/jim-2015-000035.120

Case Report Serrated polyposis syndrome (SPS) is a rare condition characterized by multiple, serrated polyps of the colon. Patients with SPS require annual colonoscopy surveillance and diligent family screening due to the heightened risk of colorectal cancer. An asymptomatic 59-year-old male with a family history of colon cancer in his father at age 70 presented for colonoscopy. The patient has a history of tobacco abuse, COPD, GERD, hyperlipidemia, and melanoma. Initial colonoscopy showed >10 polyps, with 3 sessile, serrated polyps (1 polyp>1 cm) on pathological examination. Follow-up colonoscopy 8 weeks later revealed 6 polyps, of these 2 sessile serrated polyps (1 polyp>1 cm) were found. A positive diagnosis of SPS was made and follow-up colonoscopy with chromoendoscopy was performed. 64 polyps were removed with 15 showing characteristic findings of serrated polyps. After a risk and benefit discussion the patient desired one further colonoscopy where >50 polyps were seen in the ascending colon and the procedure was then aborted. The patient was then referred for surgery and had an uneventful postoperative course. The World Health Organization defines SPS by the following characteristics: a.) 5 serrated polyps proximal to sigmoid colon, two of which are >10 mm; b.) any number of serrated polyps proximal to sigmoid colon in a patient with a first-degree relative; c.) greater than 20 serrated polyps of any size throughout the colon. The risk for cancer in SPS is dramatic; up to 70% of patients with SPS have colon cancer at the time of diagnosis or during subsequent screening evaluations. Given the malignant potential of SPS, aggressive endoscopic surveillance with chromoendoscopy is considered the accepted standard by expert consensus. Patients with SPS should undergo colonoscopies every year after the colon has been initially deemed clear of polyps endoscopically. If colonoscopy does not allow all polyps to be removed due to size or total number of polyps, colectomy with ileorectal anastomoses should be considered. Family members of patients with SPS should undergo colonoscopy every 1–2 years 10 years prior to the index case. Expert consensus states that all of these colonoscopies should be done with chromoendoscopy if appropriate expertise is available.

121 HIGH GRADE ANAL INTRAEPITHELIAL NEOPLASIA PRESENTING WITH ANAL MASS

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10.1136/jim-2015-000035.121

Case Report: Background Anal intraepithelial neoplasia (AIN), which commonly precedes anal squamous cell cancer (ASCC), has been found to be highly associated with HIV-positive males when CD4+ cell count falls below 500 cells/mm3, even in the absence of a history of anal receptive intercourse. AIN is often asymptomatic until it progresses to ASCC. Unlike cervical cancer that has well-established screening protocol, AIN is often misses resulting in increased incidence of anal cancer. Our case demonstrated atypical presentation of AIN and emphasized the importance of anal cytologic screening in high-risk patients.

Case report A 41-year-old man with a history of well-controlled HIV on HAART, anal condyloma removal 11 years ago, asthma, and schizoaffective disorder presented with a 2-month history of intermittent rectal bleeding. Physical examination was unremarkable. Initial laboratory findings revealed Hb 15.6 g/dl, platelet 190 K/uL, WBC 5.1 K/μL, absolute CD4 475 /mcL, Cr 0.9 mg/dL, normal electrolytes, and normal liver function test. He underwent colonoscopy, which showed internal hemorrhoids, scar at the anus, and a tiny nodule at the dentate line. Hemorrhoidal bandings were performed. However, biopsy could not be done due to the risk of bleeding from large hemorrhoid nearby. He was scheduled for flexible sigmoidoscopy 6 weeks later. Flexible sigmoidoscopy revealed a villous and fungating non-obstructing medium-sized mass at the anus. Pathology showed high-grade anal intraepithelial neoplasia. He was treated with topical imiquimod.

Conclusion High-grade anal intraepithelial neoplasia (HGAIN) rarely regresses and is known to be the precursor to true invasive anal cancer. Even though anal cancers screening remains controversial, recent studies have shown that yearly anal cytology screening provides cost-effective life-expectancy benefits. Timely recognition and treatment of AIN is crucial to prevent morbid and mortality associated with anal cancer.

122 INFLAMMATORY MYOFIBROBLASTIC TUMOR MIMICKING INTUSSUSCEPTION IN A 7 YEAR OLD HISPANIC MALE. A CASE REPORT

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10.1136/jim-2015-000035.122

Case Report Inflammatory Myofibroblastic Tumor (IMT) is a rare tumor first described in 1937 as a primary lung tumor. In the colorectal segment, the first case of IMT was described in the rectum by Coffin et al in 1995. There were 25 reported cases between 1995 and 2012. Intestinal presentations with intussusception are rare. More common in children and young adults, this tumor has uncertain malignant potential with a tendency toward local recurrence, infiltrative growth, vascular invasion, and possible

malignant sarcomatous transformation. Therefore, surgical excision should be regarded as the mainstay of the treatment, and long term follow up with serial imaging techniques is recommended. Intussusception is the most common cause of intestinal obstruction in children, usually occurring between 6 and 36 months of age. In older children, a pathologic lead point is often identified.

Case A 7-year-old Hispanic male patient had a 2-month history of intermittent, colicky abdominal pain, weight loss, and bloody diarrhea. Laboratory investigations were significant for severe hypochromic microcytic anemia. Colonoscopy revealed a large mass obstructing the lumen of the ascending colon covered by mucosal surface. Abdominal ultrasound showed a target sign at the hepatic flexure suggestive of intussusception. Complete reduction with contrast enema was unsuccessful. A 4.5×3.9×1.8 mucosal covered exophytic mass in the cecum was resected during laparotomy. Histopathology of the mass revealed spindle cell proliferation with dense lymphoplasmocytic infiltrate, storiform pattern and calcifications. Immunohistochemistry staining was positive for vimentin and negative for CD31, CD989, EMA, CD246, SMA, desmin, CD34, CD117, HMB45, and anaplastic lymphoma kinase (ALK), confirming the diagnosis of inflammatory myofibroblastic tumor (IMT).

Conclusion We conclude that Intraabdominal IMT may present mimicking an intussusception; hence, should be considered in the differential diagnosis of pathologic lead points in intussusception like conditions in children.

123 YOU GOTTA USE A TOOL

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10.1136/jim-2015-000035.123

Purpose of Study We previously performed a survey of primary care providers and gastroenterologists that found that clinicians either made an exclusionary diagnosis or used clinical criteria like the ROME criteria for the diagnosis of irritable bowel syndrome (IBS). In order to utilize ROME II criteria at least 17 questions must be answered by the patient. This investigation was designed to examine how often ROME II questions were asked and recorded by clinicians.

Methods Used Records were reviewed of 100 patients who were seen for a suspected diagnosis of IBS by gastroenterology fellows and faculty in an academically-oriented center with expertise in IBS. A formal tool, ibsjennifer (www.ibsjennifer.com) which lists the various ROME questions, was subsequently used to confirm or exclude the IBS diagnosis.

Summary of Results On average, only 29.4% (5/17) of the ibsjennifer questions were recorded by the clinician. The four most frequently recorded questions were: 1. "In the last 3 months, did you have continuous or recurring abdominal pain or discomfort?" (94%); 2. "What is your predominant symptom?" (90%); 3. "In the last 3 months, how often did you feel bloated or that the abdomen was distended?" (76%); and 4. "Does this discomfort or pain get better or stop after you have a bowel movement?" (66%).

Conclusions Most questions that comprise the ROME criteria were not asked or recorded during clinical encounters. Using a questionnaire tool that includes IBS clinical criteria prompts is advised if clinical criteria are utilized to make the diagnosis of IBS.

124 MEDICAL MANAGEMENT OF SEVERE FOOD IMPACTION

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10.1136/jim-2015-000035.124

Case Report For complete esophageal food impactions or impactions not relieved spontaneously, flexible endoscopy is first-line therapy for both diagnostic and therapeutic purposes. The success rate is high, over 95%, and the complications are minimal. Pharmacologic agents are often used prior to endoscopy in patients with esophageal soft bolus impaction. A 53 year old white male presented to the emergency department with dysphagia to liquids and solids for one day. He reported eating boneless chicken the night prior when he felt the food get lodged in his throat. In the emergency department his vital signs were stable. Physical exam was unremarkable. With food impaction highly suspected, gastroenterology was consulted for an EGD. The EGD was performed and impacted meat was visible in the upper third of the esophagus at 20 cm from the incisors. Attempts to traverse the food bolus with the endoscope were unsuccessful. Multiple attempts, over the course of three hours, to remove the food bolus with roth nets, biopsy forceps, tripod forceps and dilation balloons were unsuccessful. The patient remained intubated for airway protection in the MICU, he received IV glucagon once every 6 hours overnight. Repeat EGD showed that the food bolus had spontaneously passed. The biopsy showed features suggestive of reflux in the proximal and distal esophagus. He was discharged with a proton pump inhibitor twice daily and told to follow up with gastroenterology outpatient for manometry. There is no consensus regarding the management of esophageal food impaction when endoscopic intervention fails. Several pharmacologic agents are available when there are difficulties related to endoscopy however there is limited information about their efficacy. Intravenous glucagon has been shown to reduce the mean resting pressure of the lower esophageal sphincter (LES), doses 0.25 and 0.5 mg. Calcium channel blockers work on the smooth muscles of the esophagus by depleting intracellular calcium. One study reports a significant decrease in LES pressure on manometric recordings for more than one hour after 10–20 mg of sublingual nifedipine. This case is an example of the importance of pharmacologic therapy and the need for further studies in this field.

125 ESOPHAGEAL GRANULAR CELL TUMOR: A BENIGN TUMOR OR AN INSIDIOUS CAUSE FOR CONCERN?

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10.1136/jim-2015-000035.125

Case Report: Case report We report a case of esophageal granular cell tumor (GCT) found in a 36-year-old male who presented with chronic diarrhea. Patient denied fevers, weight loss, bloody stools, nausea, vomiting, dysphagia, or chest pain. Esophageal endoscopy (EGD) at an outside hospital revealed a 2.3 by 2.0 cm submucosal lesion in the mid-esophagus. Patient was subsequently referred to us for definitive management where he underwent endoscopic ultrasound (EUS) and fine needle aspiration (FNA). EUS demonstrated a round, intramural lesion in the middle third of the esophagus that was hypoechoic, originating from the deep mucosa. Final pathologic diagnosis was confirmed by immunohistochemistry, which showed the mass was positive for S-100 and CD68, and negative for CKIT (CD117) and actin. These findings are consistent with granular cell tumor. A follow-up EUS at 3 months showed no changes.

Discussion Esophageal GCTs are uncommon tumors of neurogenic origin thought to arise from Schwann cells. First described by Abrikossoff in 1926, GCTs most frequently occur in the skin and subcutaneous tissues. Less commonly, they are found in the thyroid, nervous system, breast, and gastrointestinal tract. Despite being the most common location among gastrointestinal GCTs, esophageal GCTs are rare, representing 0.001% of tumors. The distal third of the esophagus is the most common location. Esophageal GCTs are often discovered incidentally as asymptomatic submucosal masses in middle-aged patients. Their clinical course is relatively benign, with only 1–2% diagnosed as malignant. Thorough work-up is paramount and includes imaging with EGD and EUS. EUS is invaluable in determining tumor size, location, depth of invasion, origin of the lesion, and in excluding malignancy or lymph node involvement. The controversy of esophageal GCTs lies in their classification as benign or malignant, which is important to delineate because of the dismal prognosis associated with metastatic disease. Management should be conservative in asymptomatic lesions less than 10 mm, but endoscopic or surgical removal is recommended for larger, symptomatic tumors, or those concerning for malignancy.

126 SEVERE HEPATIC IMPAIRMENT AS AN INITIAL PRESENTATION OF PORPHYRIA

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10.1136/jim-2015-000035.126

Case Report: Background Porphyrias are metabolic disorders that occur due to enzyme deficiencies in the heme biosynthesis pathways. They are inherited with the exception of Porphyria Cutanea Tarda (PCT) and are classified as either hepatic or erythropoietic. The hepatic porphyrias are not usually known to cause severe hepatic injury. Here we present an abnormal case of liver dysfunction as a result of porphyria.

Case report A 25-year-old female presented with severe abdominal pain and jaundice. She had no significant past medical history and took no medications except Implanon for contraception. Physical examination showed severe jaundice and scleral icterus. Laboratory findings showed INR of 1.92, AST 432, ALT 235, ad T. bili 21.2. Viral hepatitis panel was negative as well as ANA, antimitochondrial antibodies, and smooth muscle antibodies. Urine and serum porphyrins were elevated. Liver biopsy showed severe steatosis with mild active steatohepatitis, hepatocellular and canalicular cholestasis, and focal portal-portal bridging fibrosis. She developed severe peripheral edema and was treated with furosemide. She was initially thought to have PCT secondary to her liver injury and treated with one dose of Hemin. She was discharged after the resolution of her edema. A week later, the patient was readmitted due to severe sensorimotor neuropathy affecting her hands and feet and an increase of her T. bili to 32.0. The patient was diagnosed with inherited porphyria and her Implanon was removed. She was treated with several doses of Hemin and had marked improvement in her liver enzymes and abdominal pain over the subsequent weeks.

Conclusion Hepatic porphyrias are either autosomal dominant or autosomal recessive. Although an individual can inherit the gene, several hepatic porphyrias do not have complete penetrance. As a result, people who have the gene may be asymptomatic. The diagnosis of porphyria involves urine, fecal, and serum testing for porphyrin levels. Distinguishing between the porphyrias usually involves genetic testing however; treatment for all the porphyrias is Hemin infusions, which can be initiated prior to obtaining results of the genetic testing.

127 MULTIPLE LIVER ABSCESSES DUE TO *CITROBATER KOSERI* : AN EXTREMELY RARE PRESENTATION

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10.1136/jim-2015-000035.127

Case Report: Introduction Pyogenic liver abscess (PLA) of the liver is relatively rare. Citrobacter is a very rare cause of liver abscess. We report a case of multiple liver abscess due to *Citrobacter koseri*. This is the 3rd reported case with liver abscess and *Citrobacter koseri*.

Case Presentation A 61 years old woman presented to the ER with abdominal pain, fever, and progressive jaundice of 2 weeks duration. She had history of NHL which presented with biliary obstruction that required biliary stent placement 3 years back. The biliary sent was not removed as the patient was lost to follow up. She was hypotensive requiring IV fluid boluses and pressor support. Laboratory studies: white blood count 25.16 k/ μL, serum creatinine 1.3 mg/dl, total bilirubin 2.5 (mg/dL), direct bilirubin 2.0 (mg/dL), alkaline phosphatase 345 (IU/L), ALT 57 (IU/L), and AST 152 (IU/L). U/S of the abdomen showed extensive intrahepatic biliary dilatation and multiple hypoechoic structure in the liver. CT of the abdomen showed lesions scattered throughout the liver suscpecious of abscesses. Blood culture was positive for *Citrobacter koseri*. Patient underwent liver biopsy with aspiration pus and three core biopsies. Citrobacter koseri was isolated from the pus. Pathology was negative for malignancy. The patient was treated with IV Imipenem and oral ciprofloxacin for 6 weeks and had remarkable clinical improvement. Follow up imaging studies with U/S showed complete resolution of the abscesses.

Discussion PLA due to *Citrobacter koseri* is a rare infection; we are aware of only two reported cases in the literature. Therefore, little is known about Citrobacter liver abscess in terms of incidence, associated underlying diseases, and outcome. Treatment of citrobacter koseri infection in general could be complicated by rapid development of resistance particularly if monotherapy with a cephalosporin is started. This is mainly due to due to high level of beta lactamase and cephalosporinase production. Thus, combination therapy is recommended for initial empirical treatment of Citrobacter koseri infection.

Health Care Research and Quality Improvement
Joint Plenary Poster Session and Reception 4:00 PM
Thursday, February 18, 2016

128 SMALL THINGS THAT MATTERS THE MOST-A CASE REPORT ON IMPORTANCE OF MAINTAINING ADEQUATE CARBON DIOXIDE LEVELS IN POST RESUCITATION PERIOD

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10.1136/jim-2015-000035.128

Case Report Despite adequate advancements regarding the management of patients in post resuscitation a significant number of patients do not regain consciousness, and this could be attributed in part to clinical and sub clinical seizures that can cause secondary brain injury after cardiac arrest. We report a patient who developed refractory status epilepticus during therapeutic hypothermia which resolved after maintaining slight hypercarbia. Measuring $PaCO_2$ from ABG and $ETpCO_2$ are two most common methods of measuring carbon dioxide. The former is more expensive and painful whereas the latter can be used for continuous monitoring which maximizes outcome while reducing the cost of care. $ETpCO_2$ is determined by carbon dioxide production, alveolar ventilation, and pulmonary blood flow; $ETpCO_2$ levels reflect cardiac output during CPR. Normally a $ETpCO_2$ of 5–6% is equivalent to $ETpCO_2$ 35–45 mmHg, but increasing it to 7% doubles the cerebral blood flow due to vasodilation of cerebral arteries. Hypercapnic vasodilation is due to direct effect of extracellular H^+ on vascular smooth muscle and release of vasodilator prostanoids and nitric oxide. During post cardiac arrest hyperventilation should be avoided as a measure to compensate metabolic acidosis. Hyperventilation decreases preload, thereby reducing cardiac output and coronary perfusion pressure. It is important to maintain $PaCO_2$ no lower than 40–45 mmHg or $ETpCO_2$ from 35–40 mmHg. Targeting higher range pCO_2 prevents hypocapnia induced cerebral vasoconstriction and also accounts for the temperature correction due to hypothermia. Our patient had developed refractory status epilepticus not responding to 7 different antiepileptics; a small intervention to maintain higher end tidal pCO_2 resulted in termination of status epilepticus.

129 USE OF POTASSIUM SPARING DIURETICS TO TREAT HYPOKALEMIA IN PTIENTS ON PERITONEAL DIALYSIS

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Purpose of Study Hypokalemia is a vexing problem in end-stage renal disease patients on peritoneal dialysis (PD) and oral potassium supplements (OPS) have limited palatability. Potassium-sparing diuretics (KSD) (spironolactone, amiloride) may have a preserved effectiveness in these subjects.

Methods Used We have performed a cross-sectional review of 75 current or past (vintage >6 months) PD patients with regard to serum potassium (K+), OPS and KSD utilization. We reviewed charts for multiple clinical and laboratory variables, including dialysis adequacy, residual renal function, nutritional status and co-existing medical therapy.

Summary of Results The cohort was middle-aged with 49.2 (SD=14.7) years of age and overweight with body mass index of 29.5 (6.7) kg/m2; 57.3% were females, 73.3% African-American and 48% diabetic with PD vintage 28.2 (24.3) months. Weekly Kt/V was 2.12 (0.43), creatinine clearance was 73.5 (33.6) L/week with total exchanged volume 10.8 (2.7) L. Residual urine output (RUO) measured 440 (494) mL (anuric 30.6%). Three-month average serum K+ measured 4 (0.5) mEq/L, 36% of participants were taking K+ supplements (median: 20 [0;20] mEq/day) and 41.3% were taking KSD (spironolactone dose: 25–200 mg/day; amiloride dose: 5–10 mg/day). Potassium correlated positively with weekly Kt/V ($p=0.039$) and PD vintage ($p=0.018$) but not with PD modality, exchange volume, RUO or KSD use. However, KSD use was associated with decreased use of OPS (r: -0.646; $p<0.0001$).

Conclusions KSD was well tolerated in this cohort of PD patients and decreased the need for OPS utilization.

130 COMMUNICATION BARRIERS IN THE EMERGENCY DEPARTMENT

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10.1136/jim-2015-000035.130

Purpose of Study The purpose of this study is to better understand communication barriers between various staff (nurses, residents, attending's) working in the Emergency department with an overall goal to improve patient safety and patient care.

Methods Used A five question anonymous survey was administered to all the participants including the pediatric residents, nursing staff, physicians, nurse practitioners and fellows in the emergency department.

Summary of Results The survey was completed by forty four out of seventy six residents, seventy two out of seventy seven nurses, nineteen out of twenty fellows and

attending's respectively. The most common nursing barrier in communication was that the attendings were not approachable, too busy to talk, act irritated and are offended if questioned, fish bowl set up of the team rooms making it difficult to communicate, no communication of plan of care for patients. The most common fellows/NPs issue was about resident work ethic, issues with team work and understanding expectations at each level. The residents stated that they don't want to question attendings so as to not offend them, easier to move on as they are pressed for time, difficult to figure out who the nurses are and nurses overriding residents and asking the attendings. The attendings stated that the residents do not take ownership or follow up as needed on their patients, do not communicate with the nurses and families about the plan and issues with who the nursing staff was as we had a lot of new nurses.

Conclusions Intervention: Focus group with three attendings, three nurses and two of principal investigators(fellow and nurse) was formed. We decided to update voalte(phone used in the ED for communication) pictures for ease of identification of the staff, use free text column on far right hand side of the ED board to informally update the plan of care, e.g. observe until 3 pm, pending UA, Surgery consult and plan to implement a resident run ED wherein the residents seeing the patient will answer patient care related questions and the nurse can clarify the plan with the resident instead of directly approaching the attending.

131 CREATION OF A PEDIATRIC ANTIBIOGRAM FOR KIJABE HOSPITAL IN KIJABE, KENYA

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10.1136/jim-2015-000035.131

Purpose of Study An antibiogram is an ongoing publication of the institutional pattern of antimicrobial susceptibilities of local bacterial isolates. Utilizing an antibiogram is a fundamental aspect of institutional patient care. The aim of this project was to create an antibiogram for Kijabe Hospital in Kijabe, Kenya that would allow local and visiting physicians to better understand the regional patterns of bacterial growth and antimicrobial resistance, establish evidence-based guidelines for empiric therapy, better steward limited antibiotic resources, and ultimately better serve their patients. The construction of an antibiogram at Kijabe Hospital was one of the first antibiograms to be constructed at a mission hospital in sub-Saharan Africa.

Methods Used This project involved traveling to Kenya during June 2015 to extract culture and sensitivity data from culture results at Kijabe Hospital from June 1, 2014 to May 31, 2015, and then analyzing this data to create an antibiogram. Data was extracted from 1,552 microbiology laboratory culture results and placed into a MS Excel spreadsheet that, using BacLink software, was uploaded to WHO NET5.5 database software, which was used to analyze the data for creation of the antibiogram according to Clinical and Laboratory Standards Institute guidelines.

Summary of Results This project resulted in the successful construction of two antibiograms for Kijabe Hospital: one for the pediatric ward and one for the hospital. This data is currently being used at the bedside on the pediatric ward. For blood cultures, the most common isolates from pediatric patients are S. aureus (22%) and K. pneumoniae (18%). In the newborn unit, the most common blood culture isolate is K. pneumoniae (56%). The most common isolates of pediatric urine cultures are K. pneumoniae (27%) and E. coli (25%). The most common isolate of pediatric wound cultures is S. aureus (66%). Complete findings are included on the printed antibiograms.

Conclusions At Kijabe Hospital, gram negative resistance is overall fairly high, including meropenem. S. aureus shows low rates of Methicillin resistance but high rates of Vancomycin resistance. This finding will require further study.

132 DOCUMENTATION OF QUALITY MEASURES FOR PATIENTS DISCHARGED FROM THE HOSPITAL WITH AN ACUTE ASTHMA EXACERBATION

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10.1136/jim-2015-000035.132

Purpose of Study Asthma is the most common chronic disease of childhood. Acute asthma exacerbations are one of the most common diagnoses admitted to pediatric hospitals nationwide. Factors that have been recognized to improve the care of patient with asthma include increasing influenza vaccine administration, eliminating tobacco smoke exposure, prescribing appropriate inhaled corticosteroids (ICS) based on chronic level of asthma severity and providing a home management plan. Despite the frequency of admissions for acute asthma exacerbations, opportunities exist for improvement of these quality measures. Patient charts were retrospectively reviewed for documentation for these measures and baseline data is presented.

Methods Used This project is a longitudinal resident-led quality improvement project seeking to measure and improve the care of patients admitted for acute asthma exacerbations. Patient charts admitted to the Asthma Clinical Pathway (ACP) at Children's of Alabama from January 2014 to August 2014 were reviewed for quality measures of asthma care noted previously. To be eligible for the ACP, patients must be >2 years old with an admitting diagnosis of acute asthma exacerbation or status asthmaticus with no secondary complications or co-morbid respiratory diseases.

Summary of Results 200 patient charts who met criteria were reviewed. Patients were 67% male, 33% female. Of the patients, 21.8% were Caucasian and 73.6% African American. Ideal documentation of measures was not performed between 8–33% of the time. Measures with the highest level of errors included influenza vaccine status documentation, providing smoking cessation counseling in patients with tobacco smoke exposure and matching medications between the hospital discharge medication reconciliation and the asthma action plan.

Conclusions Documentation of measures for patients admitted with acute asthma exacerbations was incomplete or incorrect 8–47% of the time. Currently, resident-led implementation of interventions is underway with ongoing data collection. We postulate that the use of a standardized asthma history and physical template will improve quality measures and lead to improvement in outcome measures.

133 DATABASE SELECTION TO INCREASE FEASIBILITY OF MEDICAL STUDENT INVOLVEMENT IN RESEARCH

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Purpose of Study Medical students are conflicted by feasibility of undertaking research opportunities especially high level research despite the direct positive impact on career development. Medical students with potential for research often veer toward focusing on medical studies alone due to fear that traditionally time-consuming and demanding research tasks will overshadow didactic medical studies. The goal of this effort was to analyze availability of automated features in databases that would appeal to medical students desiring to partake of high level research activities.
Methods Used Analyze features of available online database mechanisms for ease of custom designed data collection and automation of time-sensitive aspects of research to support a randomized placebo controlled clinical intervention trial (RCT). The database provide the entire organizational platform and support emailing patient questionnaires, alerts regarding time-sensitive missing data and have high security for data protection.
Summary of Results The only database to proximate the desired criteria was REDCap, an NIH supported platform via Vanderbilt, which provided the greatest ease and complexity in design, learning, customizable features and HIPAA compliance.

Strengths:

Online tutorials for rapid learning.

An institution specific REDCap officer.

HIPAA compliance with assignable restricted access.

Complexity for subject randomization, parallel and crossover arms, branching logic based on inputted content.

Housing and issuing of patient questionnaires timed for sequential release based on completion of last questionnaire or by enrollment date.

Ability of subjects to communicate with researchers.

Staff alerts to time-sensitive missing data.

Weaknesses:

Lack of high level support from REDCap headquarters.

No central REDCap assistance program.

Dependence on local administrator experience.

Logic statements can be difficult to code with interference of email reminder function for uncompleted surveys.

Conclusions REDCap streamlines design and implementation efforts of RCTs and may increase the likelihood of medical student involvement in high level or original research. However, the lack of assistance, difficulty in formulating logic statements, and initial time required to design data collection forms may still deter medical student researchers.

134 CLINICAL YIELD OF COMPUTED TOMOGRAPHY SCANS IN THE EMERGENCY DEPARTMENT FOR ABDOMINAL PAIN

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Purpose of Study The clinical yield of computed tomography of the abdomen in the Emergency Department (ED) for non-traumatic abdominal pain is unknown. Previous studies indicate that while CT scans can obviate the need for admission in nearly 20% of cases, little information has been published recently on how often CT scans identify clinically significant findings prompting an immediate change in management. This study's purpose was to define how frequently clinically significant findings were identified on CT scans performed during the evaluation of non-traumatic abdominal pain in an urban adult ED.
Methods Used The study examined all abdominal CT scans performed in the University of South Alabama Medical Center ED from April to June 2014 for "abdominal pain." 314 scans were performed during this time. Of these, 8 were excluded for being part of a trauma evaluation or lack of documentation. For the remaining 306 CT scans the ER record and any associated admission paperwork were examined. The 306 CT scans and clinical records were examined to identify "clinically significant findings", defined as any result that changed therapy, disposition, or prognosis. These Included: intra-abdominal abscess, appendicitis, abdominal aortic aneurysm>5 cm, cholecystitis, choledocholithiasis, diverticulitis, pulmonary embolus, signs of critical ischemia, new malignancy, obstructing nephrolithiasis, incarcerated hernia, or other surgical emergency. Once identified, the hospital course was reviewed for outcomes.
Summary of Results Among 306 scans, a total of 62 (20.3%) had a clinically significant finding. Of these, 29 (46.8%) received an immediate intervention including surgery, ERCP, or CT guided procedure within 24 hours. An additional 2 patients were urgently transferred to another facility to facilitate subspecialty surgical intervention.
Conclusions In our series, CT performed in the ED for non-traumatic abdominal pain identified clinically significant findings in nearly 1 out of every 5 patients and was a useful examination for the evaluation of abdominal pain in the ED.

135 ASSOCIATION BETWEEN PATIENT CHARACTERISTICS AND PORTAL ELECTRONIC MESSAGING PATTERNS

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10.1136/jim-2015-000035.135

Purpose of Study Prior studies have shown that frequency and intensity of email communication between patients and providers is associated with significant improvements in key HEDIS measures and higher rates of outpatient utilization.

Our study objective is to examine the association between patient characteristics and portal electronic messaging (e-msg) to provide insights into which patients are more likely to use this form of communication.

Methods Used We conducted a retrospective observational study of patients with hypertension (HTN) and/or diabetes (DM) who had a primary care provider (PCP) visit within Ochsner Health System at least twice between July 2012 and December 2014 and who have active MyOchsner portal accounts. We assessed electronic messaging (e-msg) frequency (# new e-msg per 6-month interval) and intensity (# threads per e-msg per 6-months). Using multivariate analysis, we examined associations between e-msg patterns and patient demographics (age, gender, race, diagnosis, PCP encounter count).

Summary of Results The study cohort included 9416 MyOchsner users. Most patients generate <3 e-msg per 6-month interval (82 %). There were demographic differences in the proportion of patients with higher frequency of e-msg ($\geq$50: 4.6% vs. <50: 3.9%; female 4.9% vs. male 3.9%; white 4.9% vs. black 2.6%; HTN+DM 6.2% vs. HTN 3.8% vs. DM 2.9%; all $p<0.05$). There were similar differences in intensity of e-msg. In multivariate analysis, number of PCP encounters, female gender, and co-morbid HTN+DM were associated with higher e-msg frequency and intensity whereas black race was associated with lower rates. Age was not a significant factor.

Conclusions Patients who have higher rates of contact with the healthcare system and comorbid illnesses may be more engaged in alternative forms of communication with their providers. Further studies examining strategies to increase minority engagement in use of technology for care are needed.

136 QUALITY IMPROVEMENT IN TESTING, PROPHYLAXIS AND FOLLOW UP CARE OF SEXUAL ASSAULT PATIENTS

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10.1136/jim-2015-000035.136

Purpose of Study Emergency care of sexual assault victims has been shown to be inconsistent. Victims often did not receive appropriate antibiotics and/or HIV prophylaxis and documentation of injuries, tests and treatment was regularly incomplete. Forensic nurse examiner (FNE) programs have been implemented in emergency departments to improve care. Though FNE programs are prevalent in the U.S., there are few systematic reports concerning their quality and effectiveness. The purpose of our study is to assess care of sexual assault patients evaluated by FNEs in our hospital system. The Harris Health Forensic Nursing Team evaluates over 500 sexual assault victims yearly in the greater Houston area.

Methods Used A pediatrician (MR) and medical student (AW) reviewed randomly selected charts evaluated by the FNE team in 2015. Information regarding history and physical examination documentation, testing, treatment and follow up care was abstracted based on 2015 CDC Sexual Assault/Abuse and STI Treatment Guidelines. A minimum 90% completion rate was considered adequate for the purposes of this study. Results were presented with an educational didactic session at FNE meetings.

Summary of Results Thirty charts evaluated by the FNE Team were reviewed quarterly for a total of 90 charts. History documentation improved to 100% by cycle 3 for all items except the question regarding injury in cases involving penile penetration. Documentation of examination findings was excellent in every cycle. Laboratory tests were not consistently obtained according to protocol. Performance on treatment and follow-up care improved to adequate by cycle 3 for all items except treatment with metronidazole, HPV vaccine administration and partner notification of positive STIs.

Conclusions History and physical exam documentation in our group was excellent and our team provided appropriate treatment and follow-up instructions. Due to the complexities involved in diagnostic testing following sexual assault, deficiencies in this area were not suprising. Training following each cycle resulted in modest improvements and certain processes have been implemented to improve care. We will continue quarterly chart review and will recruit a member of the FNE team to participate in our project to further improve care provided to sexual assault patients.

137 CHANGE IN PRESCRIPTION HABITS AFTER FEDERAL RESCHEDULING OF HYDROCODONE COMBINATION PRODUCTS

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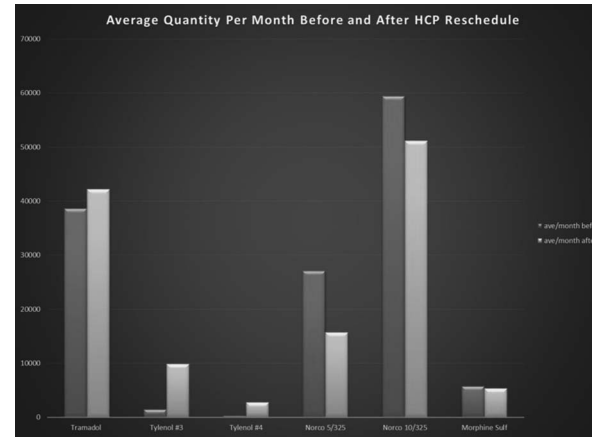
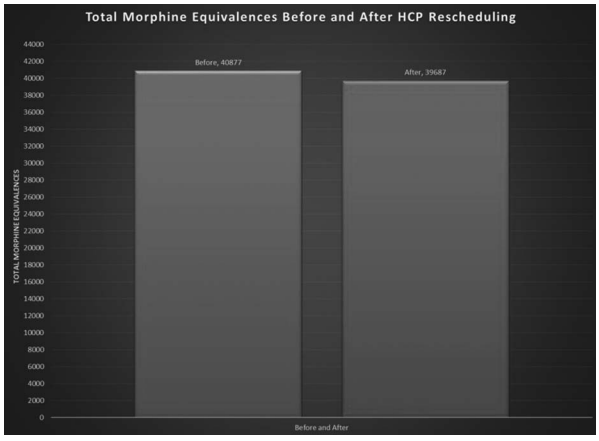
10.1136/jim-2015-000035.137

Purpose of Study The federal drug enforcement administration changed hydrocodone combination products from schedule three to schedule two prescriptions on October 6, 2014. This study sought to determine if the new regulations were effective at decreasing the total pain medication equivalents prescribed, or if it simply altered the type of pain medication prescribed.

Methods Used Fourteen Baylor, Scott and White pharmacies were queried from July 2014 through January 2015 for prescription information on tramadol, codeine/acetaminophen, hydrocodone/acetaminophen and morphine.



Abstract 137 Figure 1



Abstract 137 Figure 2

Pharmaceutical data from before and after the rescheduling were then compared to evaluate trends in physician prescribing habits.

Summary of Results See Figure 1 and Figure 2.

Conclusions The federal rescheduling of hydrocodone containing products did reduce their prescription rate however this was offset by a dramatic increase in use of alternate narcotic analgesics that do not require a triplicate prescription. Furthermore, when the pain medications were converted to equianalgesic doses there was only a very minimal decline in pain medication usage.

138 PEDIATRIC STAFF ACLS TRAINING INCREASES COMPETENCE IN CARING FOR ADULT CHEST PAIN IN A PEDIATRIC ED

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10.1136/jim-2015-000035.138

Purpose of Study Pediatric Residents and staff in children's hospitals have little experience and low comfort in treating adults. However, Emergency Department (ED) staff must stabilize adults in extremis before they can be transferred to an adult facility. Few pediatric patients come to children's hospitals alone. In our ED in 2014, 262 patients over the age of 21 were seen; 68 of those had cardiac related complaints making it the most common adult presentation to the pediatric ED. Advanced Cardiac Life Support (ACLS) is not required of pediatric residents leaving a large knowledge gap in adult care. Of the CP patients eligible for morphine or nitrates in the ED only 1/3 of those received these medicines.

Methods Used Within an existing mock code curriculum using simulation for pediatric residents, an adult chest pain case was inserted. This case involved a time dependent element, an acute ST segment Elevation Myocardial Infarction (STEMI) that deteriorates into Ventricular Tachycardia (VT). Residents and staff were evaluated on their performance in adherence to ACLS protocols via checklist. Resident knowledge base as well as confidence in treating STEMI was evaluated pre and post simulation. The case was taught by Pediatric Emergency Medicine staff who were ACLS certified. The team goal of competence was recognition of a STEMI and its time dependent nature, and proper stabilization, treatment and transfer of the patient per ACLS protocols. The sessions took place in the ED over 6 months.

Summary of Results 75% of residents invited attended the mock code sessions. The residents demonstrated a 34% increase in confidence in treating adult patients over the six months. Residents demonstrated at 41% ACLS knowledge increase from pre to post scenarios. Team competence measured by adherence to ACLS checklists increased from 60% at the beginning of the training to 83% at 6 months; an increase of 23%. Adherence to the critical key element subset increased to 100% by the end of training.

Conclusions Elements that enhanced performance included distribution and use of cognitive aides during the simulation as well as didactic teaching sessions for the residents and staff. Next steps involve repeat simulations in 3 & 6 months to look at competence retention and analysis of 2015 CP patients for adherence to ACLS protocols.

139 INNOVATION IN MODELS OF CARE FOR ADOLESCENT PREGNANT WOMEN

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Purpose of Study The circumstances of pregnant adolescents are uniquely challenging given that this population often face societal judgment and often come from disadvantaged backgrounds, which interferes with their maternity care and self-confidence in the transition to motherhood. It has been demonstrated that when clinicians and health professionals make special considerations for this at-risk population, these young mothers feel supported and have overall better maternal and infant outcomes.

Methods Used To qualify the innovation within models of care for pregnant adolescents we have conducted a systematic review of the medical literature (PUBMED, CINAHL, Embase).

Summary of Results Successful models of care for pregnant adolescents include women's clinic, school programs, home-visits, and group-based midwifery care. Such models build supportive relationships, promote a positive motherhood identity and reduce poor outcomes such as pre-term birth and low birth weight.

Conclusions Compared to traditional maternity care for adults, innovative models of care targeted towards pregnant adolescents have a greater emphasis on supporting the mother, which results in increased attendance at maternity care visits and greater rapport with health professionals.

140 IMPROVING ADHERENCE TO THE REACH OUT AND READ MODEL: QUALITY IMPROVEMENT

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10.1136/jim-2015-000035.140

Purpose of Study Language development is crucial to early development. Two-thirds of children from low income families are not read to daily and hear 30 million fewer words by age 3 compared to their affluent peers. Research shows that children participating in Reach Out and Read (ROAR), a pediatric primary care literacy program, are read to more, have higher language scores, and start kindergarten with a 6 month advantage in language skills. Our clinic, an urban, inner-city resident teaching practice, has participated in ROAR for over a year. However, our adherence to the ROAR model of giving a book and literacy counseling at every well child visit for patients ages 6 months to 5 years was less than the national average. This project sought to develop strategies to improve the percentage of eligible children that received a book.

Methods Used Baseline data were obtained over one month by comparing the number of ROAR eligible WCC visits to a daily review of the ROAR book inventory. Monthly change processes using PDSA cycles were performed over the next 3 months, which included introducing a Golden Ticket as a visual reminder to the resident that this was a ROAR visit, providing education to the residents, and involving our staff in the process. Data were reviewed for 3 weeks of each month for 4 months. We also conducted random surveys on up to 50 patients per month to ask the caregiver if the child received a book.

Summary of Results Baseline data that showed an eligible child received a book 76% of the time (inventory count), while caregivers reported receiving a book 60% (surveys). Through three months of intervention our inventory counts showed an 86% success rate and our surveys reported a 97% success rate.

Conclusions The ROAR model is an important intervention to improve language development during the crucial years of brain development. We showed that a resident teaching practice can improve adherence to this model, which is important to ensuring high risk children who will benefit most from this intervention will receive a book at appropriate WCC visits. We also showed that involving staff members can create a culture of literacy and improve book delivery practices as well.

141 REDUCING CERVICAL SPINE IMAGING IN PEDIATRIC TRAUMA PATIENTS<11 YEARS OF AGE

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10.1136/jim-2015-000035.141

Purpose of Study Children are sensitive to the effects of radiation and are at increased risk when compared to adults. Cervical Spine Injury occurs in less than 1% of children who present with trauma. Evaluation exposes children to unnecessary use of CT scans. By implementation of a cervical spine protocol, we proposed a 20% decrease in the number of pediatric trauma patients undergoing CT imaging.

Methods Used A retrospective review was used to identify patients less than 11 years of age presenting from March 2013 to December 2014. Clinical clearance was recommended if the following criteria were met: GCS was 15, the patient was able to communicate at a developmentally appropriate level, there was no neck pain, no neurological deficit, no intoxication, and no distracting injuries. If criteria were not met then X-rays of the cervical spine were recommended.

Summary of Results There were 43 trauma patients less than age 11 in March through December 2013 and there were 32 Level I or Level II trauma patients less than age 11 in 2014. The two samples were not significantly different regarding mean age ($t(73)=1.27$, $p>.05$), distribution of sex ($x2(1)=1.59$, $p>.05$), and distribution of activation level, ($x2(1)=0.41$, $p>.05$). If the patient's GCS score was less than 15 or there were positive findings, imaging was required. 16% (n=7) of 43 met the protocol's criteria for clinical clearance of the cervical spine while 19% (n=6) of the sample of 32 met the same criteria. There was an increase of 35.7% in patients meeting criteria for clinical clearance, and a 24% decrease in the number of patients undergoing CT scans.

Conclusions Cervical spine injuries are rare among young children, and radiation effects can be very harmful. Techniques to limit the radiation exposure in the trauma unit were explored by implementation of a cervical spine protocol. Clinical clearance of the cervical spine increased by 35.7% and CT scans decreased by more than 20% during the post-protocol phase as compared to the pre-protocol phase among patients who met criteria for clinical clearance.

Hematology and Oncology
Joint Plenary Poster Session and Reception
4:00 PM
Thursday, February 18, 2016

142 EXTRAMEDULLARY HEMATOPOIESIS AS A SPINAL MASS

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10.1136/jim-2015-000035.142

Case Report During adulthood, extramedullary hematopoiesis usually occurs in patients where RBC production is inadequate, most commonly in patients with hematologic disorders such as beta thalassemia and myelodysplastic syndromes. We describe a patient with Beta thalassemia minor and EMH of the thoracic spine, successfully treated with radiation therapy. The case is presented to raise awareness that EMH can occur at various anatomic sites, including within the paravertebral regions of the spine and early recognition can prevent irreversible neurologic damage. Treatment options are also reviewed. We report a patient with Beta thalassemia minor, clinically thalassemia intermedia, receiving chronic transfusion and chelation therapy, who presented with complaints of worsening lower back pain and bilateral flank pain. He was otherwise feeling well and denied related symptoms including weakness, dysuria, paresthesia, and incontinence. Diagnostic evaluation led to MRI imaging which revealed extensive soft tissue masses within the paravertebral regions of the thoracic spine. This included an 8-mm focus at T7-T8 causing mild effacement of the central spinal canal and moderate to severe left

neural foraminal stenosis. The findings were consistent with EMH. After literature review of similar case reports and a patient discussion, we treated him with radiation therapy and achieved a good response. There have been several cases describing ectopic EMH occurring as a paraspinal mass with extension to the epidural space. In many of these cases, the patient has experienced consequent neurologic deficits, including paralysis. Early diagnosis could prevent irreversible neurologic damage. The origin of paraspinal hematopoiesis tissue is unknown and suggestions include both the trabecular bone of the vertebral body or rib head as well as paraspinal branches of the intercostal veins. The key radiologic features of paraspinal EMH are important to recognize. Treatment includes simple blood transfusion and hydroxyurea. Although surgery provides immediate relief of cord compression, the high vascularity confers a high risk of bleeding. In addition, often it requires multilevel laminectomy thus leading to kyphosis or instability. Radiation therapy has been used; however the paraspinal masses can recur.

143 WHAT GALL FOR SMALL CELL CANCER!

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10.1136/jim-2015-000035.143

Case Report Gallbladder (GB) cancer usually refers to adenocarcinoma as histologic variants are rare. Pure small cell carcinoma of the gallbladder is an extremely rare cancer described in only 41 cases in the literature. A 34 year old male smoker with a history of biopsy proven Hepatitis C related chronic liver disease, presented with severe right upper quadrant pain of five hours duration. He denied any history of fever or weight loss but mentioned night sweats and intermittent abdominal pain of 2–3 years duration. Imaging studies revealed a distended gallbladder and a dilated common bile duct. CBC and liver function tests were unremarkable. A laparoscopic cholecystectomy, biopsy of an adjacent liver nodule and an intraoperative cholangiogram were performed. Pathology revealed an undifferentiated/Grade 4 small cell neuroendocrine carcinoma arising from the fundus of the GB with immunostains positive for CD56, synaptophysin and chromogranin. Significant low grade dysplasia was noted though out the gallbladder with peritumoral high grade dysplasia. Biopsy of the nodule confirmed metastatic small cell carcinoma. PET CT imaging confirmed multiple hepatic masses with increased uptake. Extra pulmonary small cell carcinoma is a distinct entity with variable prognosis, usually presenting with adenopathy or involving the gastrointestinal tract (but rarely the gall bladder). While adenocarcinoma of the gall bladder accounts for 85% of all GB cancer, small cell histology is rare, especially in a young male, in his thirties. GB adenocarcinoma is noted in older female patients with a history of cholelithiasis/cholecystitis. The treatment of GB adenocarcinoma often requires redo surgery with radical cholecystectomy and/or extended hepatic resection followed by adjuvant chemotherapy. The treatment of small cell carcinoma of the gall bladder presents a therapeutic conundrum as the disease is systemic at diagnosis requiring systemic chemotherapy. The role for loco regional therapeutic modalities is poorly defined and could be sequenced after systemic therapy, depending on response, as considered in our patient. This case highlights a tumor in a rare anatomic location with a rarer histology, especially given the age of the patient, with its attendant therapeutic dilemmas.

144 AN ODD HOME FOR CLEAR BLUE CELL TUMOR

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10.1136/jim-2015-000035.144

Case Report Ewing's sarcoma (ES) is mesodermal and ectodermal in origin with classic small, round and blue cell morphology. Overall incidence in adult is around 5%. Skeletal bone is typical location but rarely extra-skeletal origin can occur. We present a rare case of primary intraspinal extraosseous ES. A 62 year old female with four months of low back pain and lower extremity weakness presented with newly developed bowel and bladder incontinence. She neither had personal history of malignancy or previous back pain or spine abnormalities. Conservative measures were unsuccessful. Neurological exam was remarkable for decreased motor strength of left lower extremity with hyper-reflexic patellar and ankle reflexes. Magnetic Resonance Imaging revealed a large enhancing L1-L5 intradural extra-medullary mass. She underwent T12-L5 laminectomies and gross total resection of tumor. Histological exam revealed diffuse proliferation of closely packed pleomorphic nuclei with high mitotic rate. Immunohistochemistry (IHC) was positive for CD99, which is compatible with ES. Presence of Ewing Family fusion transcript (11:22) in spinal tissue confirmed diagnosis of Intradural Extramedulllary ES. ES is not common in adults and review of literature confirms intradural extraosseous primary spinal tumors are rare. In the past, a pathological diagnosis of extra-osseous ES was based on microscopic appearance and Immunohistochemistry with cell surface glycoprotein expression. Differential diagnosis based on microscopy and IHC included Small cell Carcinoma, Lymphoblastic Lymphoma, desmoplastic small round cell tumor, Primary CNS Primitive Neuro-ectodermal Tumors. Extra-skeletal ES can be diagnosed and distinguished from other primitive neuro-ectodermal tumors by identification of chromosomal translocation. Early diagnosis is key for better outcome of ES. Preoperative multi-agent chemo has allowed for conservative surgical procedures with improved post-surgical function. Extra-skeletal ES prognosis has steadily improved specifically with localized tumors that can be cured with surgery, radiation therapy, and multi-agent chemotherapy. Although primary spinal intradural ES are infrequent, given the rapid progression of the disease and commonality of adults presenting with back pain, it is imperative that ES be on the Internist's radar.

145 METHEMOGLOBINEMIA IN A PEDIATRIC ONCOLOGY PATIENT RECEIVING SULFAMETHOXAZOLE/ TRIMETHOPRIM PROPHYLAXIS

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10.1136/jim-2015-000035.145

Case Report: Introduction Methemoglobin (MetHgb) is a form of the oxygen-carrying metalloprotein hemoglobin, in which the iron in the heme group is in the Fe^{3+} (ferric) state, not the Fe^{2+} (ferrous) state of normal hemoglobin. MetHgb cannot bind oxygen, unlike oxyhemoglobin. Normally 1–2% of a person's hemoglobin is MetHgb. Methemoglobinemia has many etiologies, including various commonly used medications and has serious implications for patients, including cyanosis, arrhythmias and death. Sulfamethoxazole-trimethoprim (SMX/TMP) is a commonly used antibiotic for many indications, including prophylaxis of opportunistic infections in immunocompromised patients. SMX/TMP is a known cause of methemoglobinemia, however we found no reports of methemoglobinemia in a child receiving three times weekly dosing.

Case Presentation A 6-month-old was admitted to the pediatric hematology/oncology service for an abdominal mass, lethargy and poor feeding and was subsequently diagnosed with juvenile myelomonocytic leukemia (JMML). Because of the child's chemotherapy regimen and JMML, he was started on three times weekly SMX/TMP therapy for opportunistic infection prophylaxis. Sixteen days after initiation of SMX/TMP therapy and while in the PICU, the patient's oxygen saturation levels were abnormally low, while the arterial blood gas (pO_2) levels were normal to slightly increased indicating possible methemoglobinemia. A MetHgb level was checked on day 16 of SMX/TMP therapy and was found to be 7.2% (normal range: 0–3%). The patient's SMX/TMP therapy was discontinued, and he was given methylene blue for treatment of methemoglobinemia. After two doses, his MetHgb level was 1.4% and his oxygen saturations had normalized, indicating that the methemoglobinemia had resolved. The patient was subsequently initiated on pentamidine for opportunistic infection prophylaxis and subsequent MetHgb levels remained normal.

Discussion Because of the serious adverse effects of methemoglobinemia, early detection and treatment are essential. The clinician should always consider SMX/TMP as a possible cause of methemoglobinemia and adjust therapy accordingly.

146 HEMOPHAGOCYTIC LYMPHOHISTIOCYTOSIS TRIGGERED BY DISSEMINATED HISTOPLASMOSIS IN A PATIENT WITH HIV/AIDS.

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10.1136/jim-2015-000035.146

Case Report Hemophagocytic lymphohistiocytosis (HLH) is a life-threatening syndrome characterized by extensive inflammation and tissue destruction. Inflammation is thought to be secondary to dysregulation of activated macrophages and circulating lymphocytes, resulting in increased macrophage activity and elevated levels of inflammatory cytokines. HLH can occur as a familial (Primary) or sporadic (Secondary) disorder and can be triggered by events that disrupt immune homeostasis such as infection. A 41 y/o AAM with HIV/AIDS presented to an OSH with 20 lb weight loss, daily fevers and a chronic cough. Broad spectrum antibiotics were given for possible bacterial or PCP pneumonia. Chest CT showed non-calcified pulmonary nodules with small cavitation suggestive of a mycobacterial or fungal infection. Sputum AFB staining was negative, ruling out active mycobacterial infection. A positive urine Histoplasmosis Ag and Fungitell assay raised the possibility of disseminated histoplasmosis. On transfer to our facility he was noted to have significant pancytopenia, transaminitis, and splenomegaly, all of which had developed over the past week. On more formal evaluation, patient met 6/8 diagnostic criteria for HLH: persistent fever >38.5 C, splenomegaly, hypertriglyceridemia, Ferritin>500 ng/mL, elevated soluble IL-2 receptor, and multiple cytopenias. His overall picture was consistent with secondary HLH triggered by disseminated histoplasmosis. Chemotherapy induction was deferred until treatment of the histoplasmosis was complete. He completed a 2 week anti-fungal course and was discharged home. At a 6 week f/u visit, his transaminitis and fevers had resolved, and his ferritin and IL-2 receptor levels had significantly declined. Most patients with HLH have an acute presentation with multi-organ involvement. Diagnostic criteria help classify patients at risk for HLH as it can often be rapidly progressive and fatal if not recognized. Since secondary HLH is more common, it is critical to identify the triggering factor, as sometimes treatment of the infectious or inflammatory condition is sufficient for resolution of the HLH without the necessity for cytotoxic therapy.

147 GASTRIC PERFORATION FROM MERKEL CELL CARCINOMA METASTASIS

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10.1136/jim-2015-000035.147

Case Report Gastric tumors often arise from the gastric mucosa. However, metastatic implants should be kept in the differential diagnosis especially in the presence of a concomitant primary tumor elsewhere. A 53-year-old man from Vietnam presented with painful left buttock mass, slowly growing over 3 years, epigastric pain and weight loss. CT of the abdomen and pelvis showed an 8.7×6.2×8.7 cm mass in the left buttock and a mass-like thickening of greater curvature of the stomach with ulceration. CT guided biopsy of the buttock mass showed poorly differentiated neuroendocrine carcinoma, small cell type. Immunohistochemistry reveals expression by tumor cells of cytokeratin 20 and pan-cytokeratin, synaptophysin, CD56 and TdT and no significant expression of cytokeratin 7, chromogranin, CDX2, neurofilament protein, or TTF1,

which favored Merkel cell carcinoma. EGD showed a 3 cm ulcerated mass, pathology compatible with metastatic Merkel cell carcinoma. The case was discussed in a multidisciplinary tumor board, with decision for palliative chemotherapy and radiation to the buttock mass. After receiving cycle 1 of chemotherapy with cisplatin and etoposide, the patient presented with acute abdominal pain, and was found to have pneumoperitoneum and perforation at the level of the gastric mass. He underwent exploratory laparotomy and wedge resection of the mass. Pathology was compatible with the above findings. Patient is currently receiving palliative radiation to the buttock, with plans to resume chemotherapy after healing from his recent surgery. Merkel cell carcinoma (MCC) is a rare and aggressive skin cancer of neuroendocrine origin. It usually metastasizes to bones, brain, liver, and skin. Gastric metastases are extremely rare, and most reported cases presented with an upper gastrointestinal bleeding. There are no previous reports of gastric perforation from metastasis due to MCC. MCC is an aggressive tumor with high potential for metastasis, however gastric metastasis are extremely rare. It is very chemo-sensitive, therefore, in presence of gastric metastases, caution should be taken after chemotherapy, as necrosis of tumor cells may lead to perforation.

148 METASTATIC THYMOMA PRESENTING AS MYASTHENIA GRAVIS AND TREATMENT WITH OCTREOTIDE

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10.1136/jim-2015-000035.148

Case Report Introduction Thymoma is a rare malignancy which overall incidence only 0.13 per 100,000 person-years.[1] The tumor arise in the thymus could lead to other autoimmune conditions. Myasthenia gravis is the autoimmune disease that has strong relation with thymoma. Subtype B3 thymoma is predominantly composed of polygonal or round epithelial cells with mild atypia.[2] We report a case of metastatic thymoma type B3 presented in the patient with Myasthenia gravis, being treated with Octreotide.

Case This is a 72-year-old white male who was diagnosed with myasthenia gravis 3 years ago and was receiving therapy with Imuran. His recent scans were suggestive of significant increase in pleural-based right lung mass. CT PET scan revealed significant activity in the right lower lobe pulmonary nodules. He underwent bronchoscopy and transbronchial biopsy. Pathology revealed malignant cells with squamous differentiation. Pathology from thoracoscopy and biopsy confirmed the diagnosis of metastatic thymoma. The immunohistochemical stains for p40, PAX8 positive, most consistent with type B3 thymoma. The first standard chemotherapy is Cyclophosphamide, Adriamycin, and Cisplatin (CAP). For patient with poor performance status, alternative to chemotherapy may be the use of Octreotide especially if the tumor is Octreotide receptor avid. Octreotide scan was done and revealed significant uptake by the tumor. After discussed with patient, we decided to proceed with Octreotide suppression therapy along with steroids.

Discussion Our patient presented with Myasthenia gravis which was concomitant with metastasis thymoma. Paraneoplastic syndrome such as Myasthenia Gravis is common presentation for thymoma. Management of thymoma depends upon the clinical stage. In unresectable disease (stages III and IV), systemic chemotherapy or palliative radiotherapy may be indicated. First-line combination chemotherapy regimens are CAP. Patients who are not chemotherapy candidates, good response has been observed by using Octreotide in patients with positive octreoscan.

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149 HEMOPHAGOCYTIC SYNDROME

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10.1136/jim-2015-000035.149

Case Report Hemophagocytic lymphohistiocytosis (HLH) is a life threatening syndrome where the immune system is upregulated. The sustained activation results in a cytokine storm that cause multi organ dysfuction and severe cytopenias. HLH has been divided into a primary (familial) HLH and a secondary (acquired) HLH. Infections, autoimmune disease or malignancy can trigger secondary HLH. Primary HLH can be caused by gene mutations but it affects children less than 18 months. Incidence of HLH has been increasing in adults, hence it is important to be able to recognize the typical clinical presentation in order to quickly treat any patient. We present a case of a young 20 year old female with primary HLH. Our patient is a 20 year old African-American female who presented to our institution twice over a one month period for fever of unknown origin. She presented back a third time with a high grade fever of 104, fatigue, increased somnolence, and confusion. On exam she had severe mucositis and hyper-pigmented rash over her body. Cardiac exam revealed rales in both lung bases and elevated jugular venous pulse. Her labs showed severe pancytopenia, elevated AST, ALT, low fibrinogen, ferritin of 350 k, and LDH 10 k. Transthoracic echocardiogram showed and ejection fraction of 20% with global hypokinesis of the left ventricle. IL-2 level was 14 k. Bone marrow biopsy showed proliferation of histiocytes and hemophagocytosis. Gene panel is still pending. She was treated aggressively with etoposide, decadron, methotrexate, and she initially responded well. However she became refractory to treatment and ferritin started rising. At this point she was transferred to another center for curative bone marrow transplant. Typical HLH features are pancytopenia, abnormal LFTs, high serum ferritin, lactate dehydrogenase, low fibrinogen, rash, and absence of any prior significant illnesses. No other triggers for a possible secondary cause were identified. Although the clinical features of HLH have been well described it is still a difficult diagnosis to make because it can present in a variety of ways due to its potential to cause multiorgan dysfuction.

However, patients with primary HLH who go untreated have survival of zero at two to three months. Physicians from all specialties should be knowledgeable of HLH and its presentation in order to initiate early treatment.

150 INAPPROPRIATE IMMUNITY – A RARE CASE OF BI-CYTOPENIA

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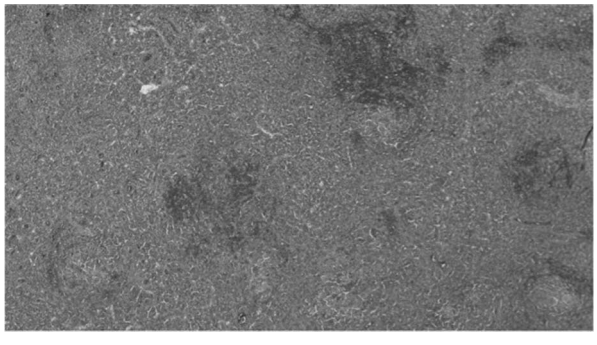
10.1136/jim-2015-000035.150

Case Report Anemia with thrombocytopenia is a common presentation to a hematologist office. Here we present a case of a patient with HIV who presented to the hospital with enlarged axillary lymph nodes, found to be anemic and thrombocytopenic. A lymph node biopsy showed regressed germinal centers and interfollicular marked plasmacytosis. An HHV8 stain was positive. A bone marrow biopsy showed trilineage hematopoiesis. 15% of the observed cells were CD138+plasma cells. Therefore, the patient was diagnosed with multicentric Castleman's disease. Castleman's disease describes a group of uncommon lymphoproliferative disorders that share common histological features that may be localized to a single lymph node (unicentric) or occur systemically (multicentric). Patients often demonstrate intense episodes of systemic inflammatory symptoms and multiple organ system impairment. HIV infection enables HHV-8 to escape from host immune control, and signal the release of IL-6 and several other proinflammatory proteins causing plasma cell proliferation and an acute phase reaction. There is no consensus treatment for multicentric castleman's disease, however proposed treatments aim to dampen the immune response of the disease. Drugs such as anti-CD-20 antibody Rituximab as well as anti-IL6 antibodies Toclizumab and Siltuximab have been used with varying success. We treated our patient with rituximab, after which her anemia and thrombocytopenia initially improved. She received 4-weekly doses of rituximab, with improving blood counts. However she quickly began becoming increasingly anemic and thrombocytopenic over the next 2 months showing how severe the immune/inflammatory response can be in Castleman's disease



Abstract 150 Figure 1 Lymph node biopsy showing regressed germinal centers and interfollicular marked plasmacytosis and vascular proliferation

151 BORTEZOMIB: A CROUCHING DRAGON, HIDDEN TIGER

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10.1136/jim-2015-000035.151

Case Report Bortezomib is approved for the treatment of patients with multiple myeloma (MM) and mantle cell lymphoma. The most frequent side effects of bortezomib are fatigue, hematologic toxicity with cytopenias, and peripheral neuropathy. 70-year-old man with no history of peripheral neuropathy was recently diagnosed with multiple myeloma (MM) – IgG kappa, received 4 cycles of VRD (Velcade, Revlimid and Dexamethasone). Three weeks after the last cycle patient presented with the multiple falls, syncopal episodes and orthostatic hypotension. On physical exam, he was noted to have a blood pressure 126/81 mm Hg with heart rate (HR) of 82/min while lying, 111/69 mm Hg and HR of 95/min while sitting and 87/56 mm Hg and HR of 114/min while standing. CBC, CMP, TSH and cortisol were unremarkable, no arrhythmias noted on telemetry during inpatient stay and on event monitor as outpatient. The patient had extensive workup including stress test, echocardiogram, lower extremity dopplers, bilateral carotid ultrasound, MRI of head which were unremarkable, but tilt- table test was positive for significant orthostatic hypotension and tachycardia. Initially patient was treated with midodrine, later florinef was added without much benefit. Subsequently pregabalin was started after the literature review, which showed some improvement in orthostasis. Bortezomib is the first proteasome inhibitor to be approved for the treatment of relapsed and refractory MM. It is generally well tolerated and has manageable side effect profile, but it can cause significant postural or orthostatic hypotension, which exists independently from peripheral neuropathy. Besides management of orthostatic/postural hypotension by adjustment of antihypertensive medications, hydration, increased salt intake, or the administration of corticosteroids with mineralocorticoid effects, bortezomib should be used cautiously in patient's with the history of syncope.

152 MONITORING INR IN THE PRESENCE OF LUPUS ANTICOAGULANT

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Case Report: Introduction Anti-phospholipid syndrome is defined by the presence of antiphospholipid antibody and clinical manifestations such as venous or arterial thrombi, or pregnancy morbidities.

Case A 50 year old gentleman with a past medical history of positive lupus anticoagulant assay and prior DVT/PE who was not on anticoagulation presented to the hospital with 2 weeks of 10/10 above the knee, right leg pain. He was unable to bear weight on this leg. He also developed upper back pain that was constant, rated 8/10, relieved by lying and worsened with movement. He also endorsed a

few episodes of gross hematuria but no dysuria. Physical exam demonstrated diffuse right leg swelling and decreased ROM due to pain. He was unable to ambulate due to pain and had a positive Homan sign on the right side. Labs were significant for elevated WBCs at 11.6 $\times 10^3/\mu l$, decreased H/H 11 GM/dL/34%, INR/protime 1.3/13.5Sec and significant bilirubin and blood found on urinalysis. Abdominal CT revealed splenic and bilateral renal perfusion abnormalities compatible with infarcts, worsening of right leg DVT, and no evidence of pulmonary embolism. He was restarted on full dose enoxaparin as well as warfarin. After two doses of warfarin, INR rose to 6.7 then 7.1 and eventually up to 17at which time, enoxaparin and warfarin were held. Research indicated that up to 30% of patients on warfarin with positive lupus anticoagulant can have artificially elevated supratherapeutic INRs. Hematology also stated that the elevated INR could be related to a drug reaction. Although patient still needed lifelong anticoagulation, warfarin was stopped as INR continued to be labile. The patient was discharged on low molecular weight heparin.

Discussion Antiphospholipid syndrome is a rare cause of venous and arterial thrombus formation that is difficult to treat and monitor. Patients may show various fluctuations in their INR once placed on warfarin therapy and a therapeutic range may be difficult to obtain. This could be caused by time of day of the administration of warfarin and various drug interactions that may affect warfarin metabolism. This case demonstrated that INR may not be reliable in patients who are lupus anticoagulant positive, and cannot be appropriately monitored for proper anticoagulation.

153 MULTI-SYSTEM LANGERHANS CELL HISTIOCYTOSIS PRESENTS AS BLUEBERRY MUFFIN RASH

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10.1136/jim-2015-000035.153

Case Report Blueberry muffin rash clinically describes a congenital rash of hemorrhagic vesiculopustules, resulting from extramedullary hematopoiesis. The differential diagnosis is extensive, including both infectious and non-infectious etiologies. We describe a case of Langerhans Cell Histiocytosis (LCH) presenting as congenital hemorrhagic vesiculopustules, and hepatosplenomegaly, emphasizing the importance of a complete work-up of blueberry muffin rash and the significance of a broad differential diagnosis. A 14-day-old male presented from another facility with worsening congenital skin rash and fever. He had hyperpigmented papules covering his entire body, petechiae in his genital region and hepatosplenomegaly. He was born full term with skin lesions resembling the classic "blueberry muffin rash." Septic work up and torch titers remained negative, and he was treated empirically with broad-spectrum antibiotics. As the rash improved transiently, he was discharged home but then returned to the hospital with fever and worsening rash. Upon further evaluation he was thrombocytopenic. Extensive infectious disease evaluation failed to reveal an etiology. Pursuing other diagnostic testing, dermatology was consulted. Skin biopsy results showed histiocytes and immunohistochemistry staining consistent with the diagnosis of LCH. To complete the staging evaluation, CT and PET scans demonstrated soft tissue and multifocal bony involvement including the skull, ribs, and lumbar spine; pulmonary involvement; colitis (GI involvement); hepatosplenomegaly (reticuloendothelial involvement); and diffuse lymph node involvement, supporting the diagnosis of congenital multi-system LCH. Congenital multisystemic LCH is associated with a poor prognosis, which requires treatment with multiagent chemotherapy. The patient was started on standard chemotherapy with vincristine, cytarabine, prednisolone, and methotrexate, with gradual resolution of his symptoms and improvement in soft tissue and bony lesions. This case emphasizes the significance of a comprehensive differential diagnosis and reiterates the importance of completing a thorough evaluation to promptly establish the diagnosis and initiate therapy with the goal of improving the prognosis of these children.

154 VORICONAZOLE-INDUCED HEPATOTOXICITY FOLLOWING ADMINISTRATION OF PEG-ASPARAGINASE: CASE REPORT

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Case Report Voriconazole is an antifungal agent commonly used for treatment of severe disseminated fungal infections. Severe hepatotoxicity requiring discontinuation of the medication has been reported in 6.5% of patients. When hepatoxicity develops, it typically occurs within one month of treatment. PEG-asparaginase is a chemotherapeutic agent frequently used in the treatment of childhood leukemia. It has been reported to be associated with elevated aminotransferases and bilirubin though this is an uncommon complication. We present the case of an 8-year-old boy with acute lymphoblastic leukemia who received a prolonged co urse of voriconazole for a disseminated Aspergillus infection. He tolerated voriconazole well for several months, but developed severe hepatoxicity after administration of PEG-asparaginase. We argue that the interaction between these two drugs resulted in hepatoxicity either by causing concomitant liver damage or by altering the metabolism of voriconazole inducing hepatic injury.

155 DRUG-INDUCED COLITIS

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10.1136/jim-2015-000035.155

Case Report Follicular lymphoma FL is second most common non-Hodgkin's lymphoma in the US. FL has an indolent course with many remissions-relapses. FL carries a relatively good prognosis with median progression-free survival of 84–42 months depending on specific risk factors. A 72 years-old female with a long history of FL (stage IV,

grade I). She had multiple lines of therapy including Rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone among others. The patient had relapsed disease despite previous therapy and she was not a bone-marrow transplant candidate. Eventually, she was started on Idelalisib. Idelalisib is a first-in-class small molecule inhibitor of PI3 K kinase. Idelalisib inhibits several key signaling pathways including B-cell receptor signaling pathways. It is an oral medication which was FDA-approved in July 2014 for relapsed FL after at least 2 prior systemic therapies. About 6 months since initiating Idelalisib, the patient started complaining of intermittent watery, non-bloody diarrhea. Diarrhea associated with cramping abdominal aches and fatigue. She did not have any fevers. Her physical exam was unremarkable and basic laboratory work-up did not reveal leukocytosis. She was treated in ambulatory setting with metronidazole and supportive care. However, her symptoms persisted and eventually she required hospitalization for dehydration. The patient underwent more comprehensive infectious work-up and a colonoscopy. Laboratory and serology was not diagnostic while her colonoscopy showed moderated colitis. Pathology was consistent with reactive colonic mucosa and no granulomas or microscopic colitis. The patient's colitis is a side effect of Idelalisib occurring in 14% of patients. This side effect represents a black-box warning. Colitis associated with Idelalisib requires careful evaluation to exclude other etiologies. Medical management includes hydration, loperamide, and budesonide. Idelalisib must be held during acute event. This case illustrates a novel side-effect of a novel oral chemotherapeutic drug. *Conclusion:* It is essential the primary care providers be educated about serious, potentially fatal, side effects of the newer orally administered targeted therapies. Prompt recognition of side effects allows for improved patient care.

156 PRIMARY DERMAL MELANOMA PRESENTING AS A SLOWLY GROWING SUBCUTANEOUS MASS IN 22-YEAR-OLD MALE

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10.1136/jim-2015-000035.156

Case Report While the incidence is poorly defined, subcutaneous melanoma may present without an epidermal component. Primary dermal melanoma (PDM), is a term used to describe this distinct subtype of melanoma confined to the dermis or subcutaneous fat, which histologically simulates metastasis, but presents as the sole primary lesion. We present a case of PDM presenting as a slowing evolving subcutaneous mass of the abdominal wall in a healthy young male. A 22-year-old male with no significant past medical history presented to clinic for the presence of an abdominal wall mass that had been steadily growing over the past "six or seven years" and had recently become quite painful. He denied trauma or other complaints. Physical exam revealed a 4×2 cm soft, relatively mobile, right upper abdominal wall mass with a smaller satellite lesion lateral to the rectus abdominis with mild tenderness to palpation but no notable skin findings. With unclear etiology, the patient was scheduled for excisional biopsy of both masses. Pathology revealed well-circumscribed highly cellular lesions with spindle cells, enlarged nuclei and scant mitotic activity consistent with malignant melanoma. Detection of the EWSR/ATF1 translocation by PCR was negative for clear cell sarcoma. The patient was referred to oncology all further work-up for primary or metastatic disease. Upper/lower-GI scope, laryngoscopy, eye exam, full body skin exam, and full body PET-CT were negative. After discussion in tumor conference, he was taken back to surgery for wide local excision around previous site of involvement. Distinguishing PDM from metastatic melanoma with unknown primary carries heavy prognostic significance. The origin of PDM is not entirely understood, but one theory is this subtype of melanoma may arise from nonepidermal melanocytes, and that progression of melanoma from these lesions is much more benign than classic cutaneous melanomas. This theory is supported by our patient's long history of a subcutaneous mass and with limited progression of the disease. While the incidence of PDM is rare, the diagnosis should be considered when assessing soft tissue masses, even without evidence of a cutaneous lesion. Wide local excision with close follow-up has been the treatment of choice.

157 GALLSTONE ILEUS CAUSING SMALL BOWEL OBSTRUCTION AS PRESENTING SIGN OF GASTROINTESTINAL STROMAL TUMOR AT LIGAMENT OF TREITZ

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10.1136/jim-2015-000035.157

Case Report Gastrointestinal Stromal Tumors (GIST) are the most prevalent mesenchymal tumors of the gastrointestinal (GI) tract and constitute about 0.1% of all GI tumors. The clinical presentation of GIST depends on the size of tumor, location and rate of growth. Small bowel obstruction (SBO) is rare, due to the tumor's outward pattern of growth. An 87 year-old Caucasian female presented with abdominal pain and vomiting of 3 days duration. A CT abdomen showed mural thickening versus pericholecystic fluid collection of gallbladder with dilated loop of the jejunum along with thickened bowel and surrounding fullness. Intraoperatively, the patient was found to have 2.5×2.2 cm gallstone at the proximal ileum causing SBO and a small bowel tumor at the ligament of Treitz. The gallstone was removed by enteretomy and the mass at the ligament of Treitz was resected at the jejunum. The tumor at the ligament of Treitz showed 4.2×2.5 cm GIST with predominantly epitheloid to plump spindle cells containing hyperchromatic nuclei with up to 6 mitoses per 50 HPF. Immunostaining revealed uniform expression of CD 117 (KIT), variable expression of CD34, focally express S100 and lack of expression of AE1/AE. Distant metastatic workup was negative. The patient was discharged to long term facility with no adjuvant imatinib mesylate. GIST is derived from myenteric ganglion cells called interstitial

cells of Cajals or their progenitors. Around 10–30% of GIST are asymptomatic and usually discovered incidentally. KIT and PDGFRA mutations are 2 oncogenic kinase mutations, mutually exclusive and occur in 85–90% of GIST. Both these mutations represent a target for imatinib therapy. The aim of treatment for localized GIST is tumor resection with clear margins. Postoperative imatinib should be considered for high risk tumors. In our case, a possible mechanism for ligament of Treitz GIST to predispose for gallstone is by inhibiting the secretion of cholecystokinin inducing hypocontractility of gallbladder or by altering calcium and oxalate absorption.

158 CAN OCCULT MALIGNANCY PRESENT WITH VISION LOSS? A RARE CASE OF PARANEOPLASTIC VISUAL SYNDROME

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10.1136/jim-2015-000035.158

Introduction Paraneoplastic visual syndromes are rare, but when present, they are typically associated with systemic cancer. Cancer-associated retinopathy (CAR) is the most common of the paraneoplastic visual syndromes and commonly associated tumors include gynecologic and hematologic malignancies, breast cancer and small cell lung cancer. Here we report a case of a patient with multiple left eye lesions that were highly suspicious for paraneoplastic autoimmune retinopathy.

Case Report A 68-year-old woman presented with complaint of visual disturbances including intermittent flashes of light and worsening night vision. She was evaluated by an ophthalmologist who obtained an autoantibody panel that returned positive for anti-aldolase and anti-enolase antibodies. Further ophthalmologic examination with an electroretinogram (ERG) was most concerning for inactive ocular histoplasmosis, but in the presence of autoantibodies, CAR remained in the differential. Patient had a remote history of DCIS of the left breast for which she underwent lumpectomy and remained on frequent observation. She had a total abdominal hysterectomy (TAH) with bilateral salpingo-oophorectomy (BSO) secondary to metromenorrhagia. A recent mammogram, colonoscopy and papanicolaou smear were negative. Malignancy work-up including carcinoembryonic antigen (CEA), cancer antigens (CA 15.3, 27.29, 125) and HE4 ovarian cancer markers were negative. Magnetic resonance imaging (MRI) of the brain and computed tomography (CT) of chest, abdomen and pelvis demonstrated no evidence of metastatic disease. Patient remains on close observation, as she has no evidence of an active malignancy.

Discussion Patients with unexplained vision loss with clinical or electrophysiologic evidence of rod and cone dysfunction should be evaluated for cancer-associated retinopathy. Testing should include anti-retinal antibodies and investigation for an underlying malignancy. Anti-enolase antibodies may be associated with CAR but are non-specific. Treatment of underlying malignancy does not clearly affect visual prognosis, as most patients will progress to blindness. CAR typically precedes cancer diagnosis therefore close observation is strongly recommended.

159 AN UNUSUAL PRESENTATION OF HEMOPHAGOCYTIC LYMPHOHISTIOCYTOSIS

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10.1136/jim-2015-000035.159

Introduction A patient with fever of unknown origin is a diagnostic and therapeutic challenge, especially when confounded by a clinical syndrome suggestive of an African illness. We present a complicated presentation of a case of hemophagocytic lymphohistiocytosis (HLH).

Case A 41-year-old male with no past medical history presented with fever, chills, arthralgia and macular rash on his trunk and distal extremities. His symptoms began while working off shore in Equatorial Guinea. Physical exam showed severe synovitis of his bilateral ankles, wrists and proximal interphalangeal joints. Laboratory work revealed leukocytosis, microcytic anemia, elevated lactate dehydrogenase, elevated creatinine, elevated transaminases, and signs of significant inflammatory response including elevated erythrocyte sedimentation rate, C-reactive protein and a ferritin >100,000 mg/L. We treated empirically with doxycycline and quinine for Malaria and vancomycin and meropenem for sepsis. Bone marrow biopsy revealed prominent clear inclusions within erythroid precursors. No hemophagocytes were noted. Serologic testing returned negative for Chikungunya virus, malaria, Parvovirus, Epstein Barr, dengue, Cytomegalovirus, and Arbovirus. After admission, patient's symptoms severely worsened. Antibiotics were discontinued, and he was started on stress-dose methylprednisolone to suppress immune response. Initially symptoms improved then returned. Computed tomography revealed mild splenomegaly. Interleukin 2 returned elevated (4720) and his natural cell activity resulted low to absent thus meeting 5 of 8 criteria of HLH. We started him on dexamethasone and etoposide per the HLH 2014 protocol. Subsequently, his fevers resolved and his ferritin trended down.

Conclusion Initially, this patient's clinical picture suggested severe sepsis secondary to viral illness such as Chikungunya, Malaria or another African viral illness given his recent travel history. However, with fever of unknown origin and ferritin>3,000 μg/L, HLH should also be considered. HLH is a rare and often fatal disease that is difficult to diagnose. This patient likely had virally induced HLH that we were unable to identify. No reports of African viral illness have been associated with HLH.

160 LIPOSARCOMA OF THE SPERMATIC CORD – RAREST ENTITY OF A RARE TUMOR

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10.1136/jim-2015-000035.160

Case Report 52 years old male with PMH of MVR, DM, OSA presented to the urology clinic at our facility for the evaluation of scrotal mass. The patient has noticed a large growth on the left side of the scrotum large enough for him to be uncomfortable for the most of the part of the

day. His only urinary symptoms was waking up several times a night to urinate and he denied color changes in urine, difficulty starting urine stream, dribbling, urination feels incomplete, hesitant urination, painful urination, urinary incontinence, weak stream or hematuria. Social history was consistent with daily use of alcohol and a married retired truck driver On examination, he was found stable hemodynamically with BMI of 32. Systemic examination was also within normal limits. GU examination revealed normal genitalia for age, no inguinal tenderness/hernia, no urethral discharge, right testicle palpable and normal. Left groin examination showed no inguinal hernia with a palpable large soft mass extending into the lower part of the scrotum almost in front of the testicle, not hard or indurated and was not attached to the overlying skin or the underlying structures. Testicle behind it on the left side was palpable and felt normal. Penis was normal. Routine blood work including UA was within normal limits. CT scan and US showed large fatty tumor with stranding of normal tissue or mesenchymal. Both testes appear separate and can be easily seen with normal appearance. Left radical inguinal orchiectomy was done and sent for pathological evaluation. The patient recovered well post surgery and the biopsy came back positive for well differentiated liposarcoma of the spermatic cord involving the para testicular soft tissue.

161 IMMUNOLOGIC WARFARE: A RARE CASE OF HEMOPHAGOCYTIC LYMPHOHISTIOCYTOSIS

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10.1136/jim-2015-000035.161

Introduction Hemophagocytic Lymphohistiocytosis (HLH) is a life-threatening, aggressive syndrome associated with excessive immune activation. It is rare in adults and most commonly affects children. Most patients have a predisposing genetic defect or an immunologic trigger such as infection, malignancy, immunodeficiency or a rheumatologic disorder causing disruption of immune hemostasis. HLH is fatal if unrecognized. Here we report a case of HLH in a young adult.

Case Report A 36 year-old man presented for evaluation of persistent fevers, night sweats, fatigue and abdominal pain. A chest, abdomen and pelvis computerized tomography (CT) on admission demonstrated hepatosplenomegaly but no evidence of an occult infection. Physical exam demonstrated scleral icterus, tachycardia, tenderness to palpation of right upper quadrant and hepatosplenomegaly but no focal neurological deficits. Laboratory evaluation was consistent with pancytopenia, hyponatremia, elevated liver enzymes with coagulopathy, an elevated ferritin level of 100,000 ng/ml and an Interleukin (IL) 2 receptor of 30,000 pg/mL. Further laboratory work-up was consistent with disseminated histoplasmosis. A bone marrow biopsy was performed and demonstrated a normocellular marrow with hemophagocytic cells. Patient met the diagnostic criteria for HLH secondary to disseminated histoplasmosis and was initiated on dexamethasone and etoposide per the HLH-94 protocol and liposomal amphotericin. He developed respiratory failure with acute respiratory distress syndrome and ischemic colitis which lead to his demise.

Discussion HLH is a rare-life threatening disease of pathologic immune system activation which can present with persistent fevers, pancytopenia, elevated ferritin, multi-organ failure and death. A high degree of suspicion should be had in patients presenting with severe sepsis or septic shock especially in an intensive care setting. Prompt diagnosis and treatment should be initiated as soon as clinical diagnostic criteria are met since mortality rate is very high. Treatment should include multiagent chemotherapy with steroids and a clinical trial should be instituted.

162 A RARE CASE OF METASTATIC FOLLICULAR DENDRITIC CELL SARCOMA TO THE BRAIN

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10.1136/jim-2015-000035.162

Case Report Follicular dendritic cell sarcoma is a rare malignant neoplasm that is a diagnostic and therapeutic challenge. There have been less than 400 cases reported in the literature. Most patients present with extranodal disease with intra-abdominal and cervical lymph node involvement. Nearly half of patients have local recurrence and/or distant metastasis to the lungs, lymph nodes, liver, and/or bone. Those with local disease and surgical resection have the best prognosis. We present a 70 year old male with history of prostate cancer for which he underwent definitive surgical resection and radiation 4 years prior to presentation. Patient had a PET scan revealing increased activity of the left hilar and subcarinal lymph nodes. Mediastinoscopy showed numerous non-cohesive large cells with round/oval nuclei, dispersed chromatin, prominent nucleoli, and abundant amounts of eosinophilic cytoplasm with foci of necrosis. Tumor cells stained for CD21 with a small subset staining for CD23 and CD4. Tumor nuclei were positive for cyclin D1 and P63. Greater than 90% of tumor nuclei were Ki-67 positive. Overall pathology was suggestive of follicular dendritic cell sarcoma despite being negative for CD35 and clusterin. He was treated with cyclophosphamide 750 mg/m2, doxorubicin 50 mg/m2, vincristine 1.4 mg/m2, and prednisone 100 mg (CHOP) for three cycles but was unable to tolerate further cycles. Repeat scans showed minimal response so he was treated with gemcitabine 900 mg/m2, docetaxel 100 mg/m2 for 3 cycles with interval improvement of disease on scans. Patient developed intolerable diarrhea with dehydration and refused further therapy. Patient then presented 3 months later with multiple enhancing lesions scattered throughout the supratentorial and infratentorial brain with surrounding vasogenic edema compatible with multifocal intracranial metastatic disease. Biopsy of temporal occipital lobe lesions showed a poorly differentiated malignant neoplasm with similar staining of CD21 and CD23 with Ki-67 representing 60% of cells. Patient received whole brain radiation totaling 3000 cGy and is currently on observation. Metastatic disease to the brain has only been published in two previous case reports. We present our experience with a rare case of rapidly progressive metastatic follicular dendritic cell sarcoma.

163 NEUROENDOCRINE TUMORS: CAN PRESENT EVEN IN URINARY BLADDER

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10.1136/jim-2015-000035.163

Purpose of Study Neuroendocrine tumors usually present in the gastrointestinal tract, small intestine, then large intestine, pancreas, and lung.[4] Neuroendocrine tumors of the bladder account for <1% of bladder malignancies.[4] Patients typically present with painless hematuria. Smoking is associated with 50–70% of neuroendocrine cases and most are diagnosed in patients around 50–60 s with a gender bias towards males.[2,4] Even with several modalities of treatment, prognosis is still poor.[2]

Summary of Results A 58 year old male with a past medical history of hypertension, diabetes, congestive heart failure, stroke, and stage IV chronic kidney disease presented in clinic experiencing gross hematuria for 2 months. His family history included father had bladder cancer and underwent multiple transurethral resection of bladder tumor (TURBT) procedures. The patient is a former heavy smoker (1 pack/day) for 20–30 years but quitted 8 years back. Physical exam was unremarkable. CT showed a mass on the anterior wall of the bladder. The patient underwent a cystoscopy and resection of the mass (3×2.7 cm) that was invading the muscularis propria. Pathology was suggestive of a neuroendocrine tumor. Tumor cells had pyknotic black nuclei and lacked a definable cytoplasm. Immunohistochemical stains indicated Ki-67 was >90% and synaptophysin positive with negative vimentin and CD45 signifying poor differentiation. Tumor was grade II and localized, urology planned surgical resection of mass with close follow-up.

Conclusions In 80% of patients gross hematuria is the major complaint while 30% also experience dysuria syndrome.[5] There are limited studies investigating protocol to treat neuroendocrine tumors of the bladder.[1] However cystectomy, radiotherapy, chemoradiotherapy, and neoadjuvant/adjuvant chemotherapy are all accepted therapies.[4] Cisplatinum/etoposide chemotherapy combination with radical cystectomy may increase survival in patients with neuroendocrine tumor of the bladder.[1,2,3] While a radical cystectomy may offer cure in localized disease, in advanced cases neoadjuvant chemotherapy with surgery may offer disease control but the prognosis is still poor.[3] Some clinicians have developed combined chemotherapy/radiotherapy/TURBT regimens as a bladder-sparing alternative to cystectomy.[6] Not enough studies have been conducted to clearly define the optimal treatment regimen.[3]

164 PERSONALITY CHANGES, COULD IT BE RECURRENCE OF ANAPLASTIC MENINGIOMA?

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10.1136/jim-2015-000035.164

Purpose of Study Meningiomas originate from the arachnoidal cap cells of the dura covering of the brain.[1] Only 1–2% of meningiomas are anaplastic.[1] Two-thirds of cases present with an allelic deletion of 22q12 and others are associated with a neurofibromatosis type 2 (NF2) gene mutation.[1] Anaplastic meningiomas have significantly lower 5 year survival rates and tend to recur shortly after resection proving current treatment to be ineffective.[1]

Summary of Results A 68 year old female presented to clinic after 2 weeks of generalized weakness and difficulty walking. General physical and neurological exam were unremarkable. MRI showed a right frontal mass 5.1 cm x 4.6 cm. Pathology was suggestive of meningioma. Immunohistochemistry, showed negative PAX8 stain, Ber-4, and a positive EMA, and biopsy confirmed anaplastic meningioma with bone and dura invasion. The patient underwent tumor resection. The patient returned 5 months later complaining of personality changes such as moodiness, obsessive cleaning, excessive counting of tiles or pictures, and confusion. CT showed lesions in the right frontal lobe (5.8 cm) with left frontal lobe metastasis (2.6×4 cm), and midline shift (1.2 cm). Biopsy confirmed a recurrent anaplastic meningioma. She underwent a bilateral tumor resection and currently is undergoing radiation therapy with consideration of Bevacizumab therapy.

Conclusions Limited studies have investigated chemotherapy in anaplastic meningioma cases. Treatment for meningiomas include tumor resection followed by radiotherapy for reoccurrence.[2] Adjuvant radiation decreases reoccurrence and increases survival however, radiation alone has not proven to be as effective.[1,3] Clinical trials are investigating the efficacy of systematic treatments such as bevacizumab (vascular endothelial growth factor inhibitor), and Octreotide for meningiomas that recur after surgery and radiotherapy efforts.[4 5] Bevacizumab shrinks tumor sizes and decreases edema which may lead to a better prognosis and decrease corticosteroid use.[2] Octreotide had variable responses in various studies. Patients who had positive octreotide scan are candidates for octreotide therapy.[5]

165 AN UNUSUAL CAUSE OF ALTERED MENTAL STATUS AND VAGINAL BLEEDING

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10.1136/jim-2015-000035.165

Case Report 55 year old female with past medical history of polycythemia vera managed with aspirin and phlebotomy, DM, and OSA presented with altered mental status of 1 day duration and recent 20% body weight loss. Hematology was consulted to evaluate the patient's pancytopenia found on initial evaluation: WBC 3.7, Hb 10.4, and platelet count of 24. Secondary to the patient's body habitus and clinical condition a bone marrow biopsy was not able to be performed. Rather, a sternal bone marrow aspirate was performed significant for a normal flow cytometry population and chromosome G band analysis revealing 45 XX -21[5], 46 XX [15] of undetermined significance. Further analysis with a CT CAP was significant for mild splenomegaly. During the hospitalization the patient was noted to have heavy irregular vaginal bleeding. The patient subsequently underwent an endometrial biopsy which returned positive for an intravascular diffuse large B

cell lymphoma. To further assess the patient's altered mental status, the patient had a lumbar puncture performed along with administration of IT methotrexate. Cytospin and flow cytometry of CSF returned as negative. The patient was treated with cycle 1 of R-CHOP in the hospital complicated by anaphylactic shock secondary to rituxan managed with steroids and epinephrine. After cycle 1, the patient's altered mental status and vaginal bleeding resolved along with normalization of her counts. The patient was managed outpatient with CHOP for 5 further cycles with addition of prophylactic IT MTX with each cycle given the high risk histology and presentation features. The patient had a PET/CT outpatient between cycle 1 and 2 which confirmed no evidence of disease systemically. Patient was determined to have 1EB disease. Repeat PET/CT after cycle 6 continued to reveal no evidence of disease. On completion of cycle 6 of CHOP, the patient underwent definitive local therapy with BSO and TAH. Pathology from the surgical specimen revealed invasive endometrioid adenocarcinoma FIGO grade 1 invading 0.2 cm out of 2.1 cm with no evidence of disease for her lymphoma. Patient is currently on observation for both her endometrial intravascular DLBCL and endometrioid endometrial carcinoma.

166 SPORADIC BURKITT LYMPHOMA PRESENTING AS ACUTE PANCREATITIS AND CONCURRENT SINUSITIS SECONDARY TO ENLARGED ADENOIDS

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10.1136/jim-2015-000035.166

Case Report Burkitt lymphoma is a highly aggressive B-cell Non Hodgkin Lymphoma. It commonly presents as an abdominal mass in the ileocecal region. We describe the case of a child with Burkitt lymphoma who presented with symptoms suggestive of sinusitis unresponsive to antibiotics, with subsequent development of abdominal symptoms due to pancreatitis, both of which are uncommon presentations. A previously healthy 8 year old male had a history of worsening nasal congestion for three months and treated for sinusitis but was unresponsive to antibiotics and steroids. He presented to us with history of epigastric pain and vomiting of one week duration. History was negative for fever and weight loss. Physical examination was significant for change in voice, nasal congestion, maxillary sinus tenderness and bilateral non-tender submandibular and anterior cervical lymphadenopathy. Abdominal tenderness was present with no organomegaly on examination. Significant lab results included elevated lipase (7500 U/L) and amylase (306 U/L). MRI of the abdomen revealed an isointense mass over the neck of the pancreas. MRI of orbit and neck showed a Nasopharyngeal soft tissue mass causing airway obliteration and opacification of the ethmoid and maxillary sinuses. Nasal Endoscopy showed adenoid hypertrophy and nasal polyposis. He underwent a biopsy of the pancreatic mass and surgery with removal of stomach masses. The lymphoid infiltrate in the pancreas and stomach was positive for CD45, CD20, CD10 and BCL-6 markers. BCl -2 and EBV were negative. Pathology results were consistent with Burkitt Lymphoma with c-MYC gene rearrangement. Bone scan was negative for metastasis. CSF was positive for malignant lymphoid cells. He was started on chemotherapy for Burkitt lymphoma with CNS involvement as per FMB 96 protocol with COP reduction followed by COPADM (cyclophosphamide, vincristine, prednisolone and doxorubicin) chemotherapy. He had resolution of clinical symptoms after the first cycle of chemotherapy and a repeat MRI showed a significant reduction in the size of the nasopharyngeal mass. Burkitt lymphoma should be considered as one of the differential diagnosis in children presenting with sinusitis if they are unresponsive to antibiotics and steroids and also in children who present with pancreatitis.

167 IMMUNE DYSFUNCTION PRESENTING AS BICYTOPENIA AND LYMPHADENOPATHY

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10.1136/jim-2015-000035.167

Case Report The differential diagnosis of bicytopenia and pancytopenia in children includes malignancy, viral suppression, iatrogenic causes secondary to certain drugs, chemotherapy or radiotherapy and rarely immunodeficiency and autoimmune disorders. Common variable Immune Deficiency (CVID) is the most common symptomatic autoimmune disorder in children. It presents mostly as recurrent bacterial infections, often associated with cytopenia. However, cytopenia is rarely a presenting symptom. We describe the case of a 4 year old girl who presented with thrombocytopenia, neutropenia and lymphadenopathy post immunizations with a good response to ITP (Idiopathic Thrombocytopenic purpura) based therapy. Based on persistent bicytopenia, an immunodeficiency was suspected. A 4 year old previously healthy girl born at term without complications with a normal newborn screen was found to have bilateral non tender, non erythematous inguinal lymphadenopathy during her 4 year well child check up at which she received DTaP, IPV, MMR and Varicella vaccinations. CBC showed Leukopenia and neutropenia with WBC 3900/μl and ANC 83/μl. Platelets were 29,000/μl. Peripheral smear was negative for blasts. Ultrasound abdomen and pelvis showed inguinal and mesenteric adenitis. Tuberculin test and viral serologies were negative. Follow up physical exams over the next 6 weeks were positive for generalized lymphadenopathy and persistent cytopenias. Coagulation profile and Complement levels were within normal limits. Anti neutrophil antibodies and ANA was negative. Antiplatelet antibodies were indeterminate. Patient was referred to the hematology service for thrombocytopenia and new onset bleeding. Bone marrow biopsy was normal. Excisional biopsy of the inguinal lymph node showed follicular hyperplasia without clonal proliferation. Post lymph node biopsy, her platelets dropped to 10,000/μl which was treated with Intravenous Immunoglobulin (IVIG) with an increase in counts to 207,000/μl. Immunoglobulin panel sent prior to IVIG infusion showed Pan hypogammaglobinemia (IgG 366 mg/dl, IgM 13 mg/dl, IgA 18 mg/dl) A diagnosis of CVID was made and monthly infusions of IVIG recommended. Cytopenias may precede the clinical symptoms of

malignant and non-malignant conditions. Immune deficiencies should be considered as a differential in all such patients.

168 GASTRINOMA IN A PATIENT WITH ACUTE INTERMITTENT PORPHYRIA

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10.1136/jim-2015-000035.168

Introduction A gastrinoma is a rare functional gastrointestinal neuroendocrine tumor typically encountered in the duodenum and characterized by unregulated, excessive gastrin. Acute intermittent porphyria (AIP) is a rare inborn disorder of the heme biosynthetic pathway with autosomal dominant inheritance; a deficiency of the enzyme *porphobilinogen deaminase* results in excess cytoplasmic porphobilinogen. Often diagnosed by the classic finding of reddish-brown urine, acute episodes are characterized by severe, diffuse abdominal pain.

Case description A 58 year old man, who was diagnosed with AIP five years prior presented to the Emergency Department with two weeks of abdominal pain that was more constant and severe than his prior AIP flares. The pain was associated with nausea, vomiting, and a palpable RUQ mass that enlarged after meals. Contrasted abdominal CT revealed a $1.5 \times 1.5 \times 1.4$ cm mass in the first part of the duodenum, partially obstructing the gastric outlet. MRI demonstrated features consistent with a neuroendocrine tumor. Upper endoscopy showed multiple punctate ulcerations throughout the stomach and duodenum, and a gastrin level was elevated to 873 pg/dL, well above normal limits but below the 1000 pg/dL threshold for diagnosis of gastrinoma. An endoscopic FNA specimen taken from the tumor stained positive for CD56, chromogranin, and synaptophysin and exhibited a Ki67 proliferation index of 1%, consistent with a well-differentiated neuroendocrine tumor. The tumor was resected and final pathology was consistent with biopsy. The patient's 24-hour porphobilinogen excretion was 4.1 mg, 2.75 times the upper limit of normal. Of note, the patient's 5 HIAA (frequently elevated in the setting of carcinoid, another functional neuroendocrine tumor) was within normal limits.

Case discussion There is no documented association between gastrinoma and acute intermittent porphyria. AIP is associated with various gastrointestinal diseases including cirrhosis, hepatocellular carcinoma, and chronic pancreatitis. The neurotoxic effects of frequently elevated porphobilinogen in the setting of AIP may predispose to the development of neuroendocrine tumors, though the rarity of both diseases renders such an association quite difficult to prove.

169 A RARE CASE OF RESISTANT EVANS SYNDROME – SUCCESSFULLY TREATED WITH PLASMAPHERESIS

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10.1136/jim-2015-000035.169

Case Report Evans syndrome (ES) is a rare and severe disease in children, defined by the combination of autoimmune hemolytic anemia (AIHA) and autoimmune thrombocytopenia (ITP) in the absence of known underlying etiology. Cold agglutinin AIHA (CAIHA) is relatively uncommon compared with warm antibody AIHA (WAIHA) in the setting of ES. It is associated with significant mortality and morbidity. We report a very rare pediatric case of resistant Evans syndrome with CAIHA, which responded favorably to plasmapheresis. A 6-year-old male, who initially presented with diffuse bruising, was diagnosed to have ITP. He was treated with IVIG and steroids. He later presented to our facility with increased bruising, petechiae and a gradual decrease in hemoglobin. This anemia was normocytic in nature with elevated lactate dehydrogenase, total bilirubin, reticulocyte count and positive direct Coombs test confirming the diagnosis of AIHA. This paired with ITP established the diagnosis of Evans Syndrome. The patient had unusually high tires of cold agglutinins in his serum, which were active at 37 C (anti P1 antibodies) requiring almost daily transfusions. He was started on rituximab and did not show any response. At this point in consultation with our transfusion medicine specialist plasmapheresis was started. Gradually his counts improved and hemoglobin was stable in the range of 8–9 gm/dl and platelets in range of 50–75 $\times 10^3$/ul. Currently our patient is 1 year from treatment with no recurrence. The management of ES with a CAIHA is very challenging. Avoidance of cold is an important component of management. Corticosteroids are less effective in cold AIHA than in warm AIHA. Other second-line treatment options include rituximab and immunosuppressive agents. As the agglutinins causing hemolysis in CAIHA are of the IgM subclass with predominantly intravascular distribution, it is reasonable to think plasma exchange can be effective in CAIHA. However, the results in pediatric patients with CAIHA have showed mostly transient improvement in only a minority of patients. As we know cases of ES run a chronic waxing waning course so he needs to be followed closely for further flares. This will also answer the question about whether his response with plasmapheresis is long term or temporary.

170 MYELOMA IN MARROW WITH LYMPHOMA IN LYMPH NODES

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10.1136/jim-2015-000035.170

Case Report Mutiple Myeloma (MM) and Mantle cell cell lymphoma (MCL) are common B cell neoplasms. An 85 year old male was evaluated for aortic valve repair and pre-op imaging demonstrated mediastinal adenopathy. Further work up confirmed generalized adenopathy in the cervical, supraclavicular, axillary, mediastinal, retroperitoneal and inguinal regions with lymph node sizes 2.0 to 3.0 cm and modest SUV uptake. An inguinal excision node biopsy revealed partial effacement of the lymph node with small-intermediate size lymphocytes positive for CD19, CD20, CD5, cyclin-D1 and negative for CD23 with FISH

studies positive for t(11,14) in 47% of cells. A bone marrow biopsy revealed 55% monoclonal lambda restricted plasma cells (CD19, CD45 negative and CD56 positive), in a hyper cellular marrow (75% cellularity). Less than 1% involvement with mantle cell lymphoma noted. FISH for t (11,14) in the marrow was positive weakly in less than 4% of cells. Work up revealed on serum immunofixation-monoclonal lambda restricted light chains, a free light chain ratio of 0.02 and a Beta-2 microglobulin level of 6.9, moderate anemia and renal insufficiency (possibly unrelated to myeloma), normal calcium levels and a PET-CT and skeletal survey with no skeletal involvement. Thus, the patient was given a diagnosis of stage IIIA MCL and smoldering MM and given his age and indolent presentation was started on a combination of Bortezomib and Decadron which has activity against both malignancies. The hallmark of MCL is t(11;14)(q13;q32); this genetic alteration leads to overexpression of cyclin D1, an important regulator of the cell cycle. The same translocation and over expression of cyclin D1 has been recognized in a subset of patients with MM. It is suggested that over expression of this important cell cycle regulator is crucial for malignant cell survival in MCL. Although the t(11;14)(q13;q32) can be present in both MCL and MM, the genetic background is different. In the first, the translocation results from VDJ recombinations, and in the later, it is the product of errors in somatic hypermutation within the IgH switch regions. This case adds to less than 5 reports in the literature of concomitant/synchronous diagnosis of MCL and MM.

171 BILATERAL ADRENAL HEMORRHAGE: A RARE CLINICAL PRESENTATION OF HIT

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Purpose of Study Heparin-induced thrombocytopenia is a pro-thrombotic disorder caused by platelet-activating antibodies that recognize platelet factor 4 (PF4)-heparin complexes resulting in activation and consumption. We present a case of heparin induced thrombocytopenia associated bilateral adrenal hemorrhage after a coronary artery bypass graft, resulting in primary adrenal insufficiency and acute adrenal crisis.

Methods Used A 63 year old male presented with complaint of right upper extremity swelling and DVT nine days post CABG. He had thrombocytopenia (count falling to 26 K) which was determined from Heparin Induced Thrombocytopenia (HIT), confirmed by HIT antibody testing platelet. HIT was complicated by ischaemic/necrotic right hand digits and left foot. Following an extended stay in the ICU the patient responded poorly to a steroid wean, with lethargy and hypotension. In addition, he developed transaminase elevation. An MRCP abdomen performed for the purpose of diagnosing biliary disorder showed bilateral adrenal hemorrhage. Transitioning from argatroban to warfarin his platelet count slowly improved and the patient gradually made a full recovery and was discharged to rehabilitation on oral steroid replacement.

Summary of Results Although isolated HIT is well documented, bilateral adrenal hemorrhage resulting in primary adrenal insufficiency secondary to HIT remains inadequately recognized and undertreated.

Conclusion When abdominal pain, hypotension and fever are associated with a drop in platelet count on heparin therapy, acute adrenal insufficiency secondary to HIT should be considered. Early diagnosis is critical for the treatment of this life-threatening complication. Adrenal hemorrhagic necrosis occurs in 3 to 5% of HIT patients, and is characterized by abdominal or flank pain; when necrosis is bilateral, death from adrenal crisis can result, which is preventable with timely use of corticosteroids

172 RITUXIMAB THERAPY FOR RECURRENT REFRACTORY TTP-HUS

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10.1136/jim-2015-000035.172

Introduction TTP-HUS is a systemic phenomenon whereby endothelial injury evokes microangiopathic hemolytic anemia (MAHA) consisting of platelet-rich thrombi. Idiopathic TTP-HUS is a distinct pathology, not caused by an inciting event (e.g. E. coli Shiga Toxin), but is likely from auto-antibodies attacking ADAMTS-13. With the likely etiology of refractory TTP-HUS at least in part rooted in B-cell auto-inflammation, treatment with targeted B-cell therapies such as rituximab has potential.

Case A 26 year-old man presented to nephrology clinic with a recurrent case of idiopathic TTP-HUS. His past medical history was significant for TTP-HUS at age 21, at which time he suffered malignant hypertension, resolving CN VI palsy, and developed chronic kidney disease. He was treated with plasma exchange (PEX), methylprednisolone sodium succinate and fresh frozen plasma during his initial case of TTP-HUS at age 21. Upon this second presentation of TTP-HUS, he again was treated with PEX and steroids per suggested guidelines. He had no significant clinical improvement after about three weeks of therapy so methylprednisolone was replaced with pulse doses of prednisone and rituximab. Within 10 days of this change, his platelet count began rising and he was discharged home.

Discussion There is a lack of reliable data on managing relapsing/refractory idiopathic TTP-HUS in adults. There are encouraging case reports on the therapeutic role of rituximab in relapsing/refractory idiopathic TTP-HUS. Rituximab is an anti-CD20 monoclonal antibody targeting B-cells of the human inflammatory system. The accepted theory that autoimmune ADAMTS-13 B-cell antibodies are at the center of idiopathic TTP-HUS etiology makes rituximab a logical treatment option. However, a paucity of clinical trials has left necessary questions unanswered; precise guidelines on when to begin therapy, appropriate patient dosages, and duration of induction and maintenance therapies remain unclear.

173 A RARE PRESENTATION OF PARAGANGLIOMA INVOLVING THE CERVICAL SPINE

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10.1136/jim-2015-000035.173

Introduction Paragangliomas are rare vascular neuroendocrine tumors that are derived from embryonic neural crest. About 5–10%, paragangliomas are extra-adrenal with about 3% of them located in the neck and skull branch. They are very slow growing and have a median doubling time of about 4.2 years. Most paragangliomas are benign but can have malignant transformation in about 10%. In rare cases, they can be locally aggressive and cause damage to the surrounding area. We report a case of a 54 year old male with an extremely large paraganglioma of the neck with severe cervical cord compression.

Case Report 54 year old African American male presented with left arm swelling,pain,episodic neck pain,increasing difficulty turning his head, and blurry vision of 2 month duration. Physical exam demonstrated fullness to the left side of the face and mass in the left anterior neck that wraps around to the posterior neck. CT of the neck with contrast showed a large mass of 5 cm x 4.7 cm occupying the left carotid and left paravertebral spaces eroding the posterior arch of C1 and C2 on the left with severe compression of the spinal cord at C2/C3 levels. The mass appears to extend 9 cm in craniocaudal dimension within the spinal canal to the level of C6. CTA and MRI of the neck with encasement of the left vertebral artery and left cervical internal carotid artery as well as occlusion of the left jugular vein with occlusion of the left sigmoid and distal transverse sinuses. ENT performed an excisional biopsy of the mass which returned as paraganglioma. Free plasma metanephrines and catecholamines along with 24-hour urinary metanephrines and catacholamines were negative and tumor is thought to be non-secretory. He will undergo a posterior C1-C2 laminectomy with surgical stabilization for spinal cord compression followed by radiation. A surgical resection was pursued but his intraoperative bleeding risk is high secondary to encasement of the arteries.

Conclusion Paraganglioma is a rare tumor that is benign and slow growing. As presented in the case report, this can lead to late diagnosis and can result in severe damage such as severe cord compression. Treatment usually consists of resection with endovascular embolization prior but in patients who are non-resectable, radiation therapy can be considered.

174 UNEXPECTED LYSIS IN A RARE COMBINATION CANCER

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10.1136/jim-2015-000035.174

Case Report A 68y old male presented with acutely progressive SOB. He had a CT abdomen a week ago for evaluating liver mass which showed left lobe mass measuring 16 cm with some foci in the right lobe and lymph nodes near porta hepatis, IVC, and also invoved lumbar spine. Biopsy reported "well to moderately differentiated Hepatocellular Carcinoma (HCC) and Cholangiocarcinoma (CC)". On exam: alert, dyspneic, Temp 36.6, pulse 128, RR 20, BP 109/77, SpO2 92%. Right lung- dull to percuss with markedly diminished breath sounds. WBC 66.5, Bicarb 19, BUN 33, Creatinine 2.3, Alk phos 188. He was admitted for acute right pleural effusion and acute kidney failure (baseline creatinine 1.1). Right pleurex tube was placed, draining 3 L of bloody fluid. Following day, uric acid was 18.9, phosphate 12.5, potassium 6.4, calcium 8.9, meeting 3 of 4 Cairo-Bishop criteria for Tumor Lysis Syndrome (TLS). Diagnosis of metastatic CC and HCC with Spontaneous TLS was made. He denied treatment, opted for home hospice, and died the following day.

Discussion TLS is an oncologic emergency caused by massive tumor cell lysis and the release of large amounts of cell breakdown products into systemic circulation usually seen 12 to 72 hours after systemic chemotherapy. Laboratory TLS is defined as 2 or more of: hyperuricemia, hyperkalemia, hyperphosphatemia, and hypocalcemia, usually presents 2–7 days post chemotherapy. Clinical TLS is: laboratory TLS plus one or more of the following not due to treatment: serum creatinine ≥1.5 times upper limit, cardiac arrhythmia, sudden cardiac death, or a seizure. TLS usually occurs in patients with high-grade lymphomas and mature B-cell acute lymphoblastic leukemia after initiation of cytotoxic therapy, although it may also occur **spontaneously** with other tumor types with a high proliferative rate and large tumor burden.

Conclusion Combination HCC and CC among primary liver tumors has a low incidence rate of 1.3% as per a recent study in National Center Institute's registry database. There are reported cases of TLS in large HCC treated by transarterial chemoembolization and following Psorafenib therapy, but **none** reported so far with Spontaneous TLS in cHCC-CC. With this case we bring to attention the possibility of rare occurrence of **Spontaneous TLS with cHCC-CC.**

175 THREE STRIKES AND YOU'RE… SAFE? A CASE REPORT ON PCV WITH LEUKOCYTOSIS AND THROMBOCYTOSIS

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10.1136/jim-2015-000035.175

Case Report Polycythemia vera (PCV) is not a rare disease; survival is often long. The recognition of a possible myeloproliferative shift is important to the hematologist and to physicians in general. We present a case of a 52-year-old male with JAK2-positive PCV, who comes for his routine exam without complaints. He has a history of phlebotomies, but is currently controlled on ASA 81 mg daily. He is without history of thromboses. He has a gradually enlarging spleen. Labs one year ago: WBC 11.3, H/H 13.6/45.3, PLT 481; one month ago: 20.2/11.9/40.9/608. Today his lab values: 35.4/14.4/47.3/751, MCV 67, Ferritin 17.6, indicating iron deficiency. Peripheral smear and flow cytometry did not suggest an acute leukemia or

lymphoproliferative disorder. A bone marrow performed showed focal non-paratrabecular lymphoid aggregate comprised mostly of small lymphocytes. It also showed a hypercellular marrow with panmyelosis without an erythroid predominance and mild to moderate reticulin myelofibrosis. PCV is a JAK2 positive myeloproliferative neoplasm whose median age of diagnosis is approximately 60 years. Its most prominent feature is an elevated hemoglobin/hematocrit with classic findings of erythromelalgia and often splenomegaly. The treatment for PCV, including phlebotomy, hydroxyurea, aspirin, is based on minimizing clinical, physical, and lab features to prevent downhill sequela. Patients are stratified with higher risk appropriate for cytoreduction +/− phlebotomies. PCV has the ability to transform to myelodysplasia and/or acute leukemia and should be monitored as such. Our patient had the warning signs of a transformation. Acute leukemia would appropriately be the first thought, but with minimal changes in his biopsy, other etiologies can be proposed. Although shift to leukemia and myelofibrosis are known, there have been reports of patients transforming to Ph-positive CML while others have had concurrent PCV and CML. Further studies such as repeat JAK2, Ph chromosome, BCR-ABL, CALR mutation could be investigated in this patient. Although he is low risk, treatments other than aspirin could be considered. Despite his enlarging spleen and lab findings, our patient's bone marrow currently does not point to a shift. Close followup is necessary as a shift is still possible.

176 A UNIQUE INITIAL PRESENTATION OF SICKLE CELL DISEASE

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10.1136/jim-2015-000035.176

Case Report Altered mental status is commonly investigated in pediatrics. While the differential is broad, a review of systems, physical exam, and past medical history narrow the possibilities. We present an interesting case of altered mental status due to a surprising diagnosis. FS is a 12 year old African American male who was found difficult to arrouse after having headache, nausea, and emesis for one day. His initial workup was significant for an elevated white blood cell count, mild anemia, mild hyperbilirubinemia, normal CSF studies, and an MRI of the brain revealing multiple hyperintense foci scattered in the cerebral cortex. These findings, along with hyperreflexia and weakness on exam raised concerns for acute disseminated encephalomyelitis versus vasculitis. With no known history of autoimmune disease, ADEM was more likely and he was started on methylprednisolone. Repeat MRI of brain and spine were significant for stable lesions in the cortex, but surprising marrow changes in the lumbar spine. Bone marrow biopsy was obtained to rule out a malignancy prior to starting high dose steroids for ADEM. The marrow showed scattered necrosis, a finding associated with ischemic sickle cell changes. On further questioning, mom revealed a family history of sickle cell disease, but F.S. was born in Germany and had not received a new born screen. Hemoglobin electrophoresis showed HgbS-50.2%, HgbC -45.3%, HgbA -0%, HgbA2- 4.5%, HgbF <1.0%, diagnosing him with HbSC disease. This process is associated with rigid sickling of red blood cells during times of hypoxia, dehydration, and infection that cause microinfarcts and endovascular damage over time. Putting this finding together with the anemia, necrotic marrow, and vascular changes on MRI, our patient ultimately had an acute vascular exacerbation of his previously undiagnosed sickle cell disease, likely triggered by his preceeding gastroenteritis. His steroids were stopped and he received a full evaluation of possible sickle cell related end organ damage, including MRA/MRV, echo, eye exam, and kidney function. After receiving neuro-rehabilitation he was discharged having returned to baseline. This case highlights the importance of newborn screening, allowing for the proper surveillance and management of chronic diseases including sickle cell disease.

177 ORGANOMEGALY IN A YOUNG MAN: AN ATYPICAL PRESENTATION OF ACUTE LYMPHOCYTIC LEUKEMIA

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10.1136/jim-2015-000035.177

Case Report In the United States approximately 6,000 people are diagnosed with Acute Lymphocytic Leukemia (ALL) every year. Aside from a few case reports of T-cell ALL in children, diffuse renal involvement has only rarely been reported as the presenting sign of ALL. This case highlights a patient who presented with diffuse involvement of the kidneys and liver with normal peripheral blood counts. A 22-year-old autistic male presented to the emergency room with a two week history of abdominal pain, increasing abdominal girth, and fatigue. His abdomen was distended and diffusely tender and labs were significant for elevated uric acid, elevated lactate dehydrogenase, acute kidney injury, mild elevations in liver enzymes, and bilirubin. Complete blood count was normal, with a normal differential. A computerized tomography scan of the abdomen and pelvis demonstrated hepatomegaly and bilateral nephromegaly without focal masses. Although the patient's CBC was normal, his electrolytes were concerning for early tumor lysis syndrome (TLS). With the consideration of hematologic malignancy, he underwent bone marrow evaluation and renal biopsy under general anesthesia. The renal biopsy revealed diffuse infiltration with blast cells consistent with B-lymphoblastic leukemia. The patient's marrow was hypercellular with atypical cells consistent with ALL. In the hours following the procedure, the patient developed worsened tumor lysis syndrome and lactic acidosis with respiratory decompensation requiring Intensive Care Unit transfer. In addition to rasburicase dialysis in, he was started on a young adult chemotherapy protocol for ALL. His course was complicated two weeks into treatment with development of gram negative bacteremia secondary to neutropenia, and he died of severe sepsis despite maximum resuscitative measures. B-Cell ALL affects people of all age ranges. Typical findings include abnormal blood counts, fatigue, and signs of infection or bleeding. Nephromegaly and hepatomegaly are rare presentations of this common form of leukemia. This patient having a normal CBC in the setting of

organomegaly and TLS highlights the importance of considering ALL involvement of solid organs as an initial presentation of the disease. This case illustrates the unpredictable nature of this disease.

178 SUSPECTED ESSENTIAL THROMBOCYTHEMIA AS CAUSE OF CRYPTOGENIC STROKE

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10.1136/jim-2015-000035.178

Case Report: Case A 31 year old man with a past medical history of marijuana abuse presented with progressively worsening headache over four days with development of left sided weakness and slurred speech. Physical exam was significant for left upper and lower extremity weakness with mild dysarthria. He was also found to have an asymmetric smile and nasolabial fold flattening. Sensory and cerebellar exam were intact. His NIHSS score was calculated to be 4. Labs were significant for thrombocytosis (618 K/uL), a low TSH (0.220 U/ml) with normal free T4 (0.90 ng/dL) and a normal ferritin (235 ng/ml). Initial head CT was negative. An MRI of the brain showed several subacute pontine infarcts with a small hemorrhagic component. There was no abnormality seen on the MRA of the head and neck. Transthoracic echocardiography with bubble study revealed a small PFO, which was managed with antiplatelet therapy given the lack of left atrial thrombus seen on subsequent TEE. Upon chart review, the patient's platelet count was noted to be elevated on a prior visit one year earlier (688 K/uL), raising suspicion for essential thrombocythemia. Hematology was consulted and a hypercoagulability workup, including a JAK 2 mutation analysis, was negative. He was discharged on daily aspirin, BCR/ABL was ordered and an outpatient bone marrow biopsy was arranged with close follow up with hematology and neurology.

Discussion Essential thrombocythemia (ET) is characterized by a persistently elevated platelet count over 450 K/uL that may be accompanied by thrombotic or hemorrhagic events. ET varies from the other chronic myeloproliferative disorders (MPDs) in that it is a diagnosis of exclusion and is not explainable by a reactive process, iron deficiency or other myeloproliferative process. Work up of ET includes testing of acute phase reactants to rule out an underlying inflammatory process, BCR/ABL testing to rule out CML, and bone marrow aspiration which typically reveals megakaryocytic hyperplasia. Greater than 50% of patients with ET will have a positive JAK 2 V617F mutation. Treatment is aimed at prevention of thrombotic events and typically consists of low dose daily aspirin and cytoreductive therapy with hydroxyurea or interferon.

179 AN UNUSUAL CAUSE OF NASAL CONGESTION IN A YOUNG HEALTHY PATIENT

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10.1136/jim-2015-000035.179

Introduction Ewing's sarcoma (ES) is a highly malignant small round cell tumor, which can have both skeletal and extraskeletal forms. The skeletal forms in the long bones are the most frequently encountered. Extraskeletal ES most commonly occur in the soft tissues of the extremities, chest wall and retroperitoneum. Extraskeletal ES occurring in the sinonasal tract is extremely rare with only a few documented case reports published worldwide.

Case 31-year-old male presented with progressive right-sided nasal congestion and maxillary sinus pain and pressure. His history was significant for allergic rhinitis diagnosed at 12 years of age for which he had taken several different antihistamines over the course of many years. Past surgical, family and social histories were unremarkable. On exam his septum was deviated to the left anteriorly and rhinorrhea was present in the left nasal cavity. An exophytic mass completely opacified the right nasal cavity. MRI Brain showed a large enhancing nasal mass consisting of both cystic and solid components. The mass was eroding the posterior medial wall of each maxillary sinus into the nasopharynx and the floor of the anterior cranial fossa. Sinonasal endoscopy with biopsy of the right-sided nasal mass was done. Pathology revealed a malignant neoplasm consisting of sheets of small blue, ovoid to spindled cells that stained positive for CD99 compatible with Ewing's sarcoma. FISH analysis confirmed the presence of EWSR1 gene rearrangement. Bone scan was done for further up and showed increased uptake in the region of the nasal bone, nasal septum and maxilla but no other evidence of osseous metastatic disease. A venous access port was placed for the initiation of multiagent systemic chemotherapy. External beam radiation to the site is scheduled after completion of chemotherapy.

Discussion Extraskeletal Ewing's sarcoma of the sinonasal tract may be extremely rare; however, basic knowledge of the microscopic appearance, characteristic immunohistochemistry, and cytogenetics can make it a rather simple diagnosis. Treatment regimens including chemotherapy and radiation should be initiated promptly, and close follow up is recommended to monitor for potential recurrence.

180 DEDIFFERENTIATED PARA TESTICULAR LIPOSARCOMA MASQUERADING AS INGUINAL HERNIA

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10.1136/jim-2015-000035.180

Case Report Liposarcoma, a soft tissue sarcoma, usually occurs in the extremities or in the retroperitoneum. Para testicular liposarcoma originating from the spermatic chord is a relatively rare location. Dedifferentiated para testicular liposarcoma is an extremely rare histological subtype of liposarcoma. A 71-year-old male presented with a 3 month history of right groin swelling. Clinical examination revealed a large right inguino-scrotal swelling, soft in consistency, approximately 20 cm in size. Testicular ultrasound and CT abdomen-pelvis was consistent with a large right inguinal hernia (fat filled) extending into the scrotum. Routine labs were within the normal limits as were perioperative B-HCG and AFP levels. At surgery, a large

lipomatous mass was noted with no evidence of an inguinal hernia. An intraoperative Urologic consultation led to a right inguinal orchiectomy. A spermatic chord mass 19×10×7 cm weighing 385 grams was noted on gross pathology.. Microscopic examination confirmed a dedifferentiated liposarcoma with homologous lipoblastic differentiation with myxofibrosarcomatous features. CT chest, abdomen and pelvis with IV contrast, post orchiectomy, was positive for a postoperative hematoma of the right scrotum and a 3 mm nonspecific pulmonary nodule. Liposarcoma accounts for less than 10% of para testicular sarcomas, more often seen in adults than children, observed in a handful of case reports from the globe (often from Japan). It is frequently mistaken for an inguinal hernia, hydrocele, spermatocele or testicular tumor as was the case with our patient. Well differentiated Liposarcoma and Myxoid Liposarcoma are the commoner subtypes while Dedifferentiated and Pleomorphic Liposarcomas are rarer variants with increased malignant and metastatic potential. The treatment of para testicular liposarcoma involves a radical orchiectomy with high ligation of the spermatic cord without retro peritoneal lymph node dissection. An expectant management strategy follows with radiation and re excision (including scrotectomy) reserved for positive margins or recurrence. Recurrence patterns are usually loco-regional and rarely metastatic with the role of chemotherapy poorly defined.

181 CHARCOT'S OSTEOARTHROPATHY MIMICKING AN OSTEOSARCOMA OF HUMERUS

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10.1136/jim-2015-000035.181

Introduction Pathologic fracture due to malignancy are common in oncology practice. Here we present an unusual case of a patient referred to oncology clinic for evaluating spindle cell neoplasm associated with pathological fracture of right humerus, which later proved to be a Charcot's joint secondary to syringomyelia. Clinical findings, pathophysiology, diagnosis and management of Charcot's joint are discussed.

Case report 71 year old Caucasian male with history of hypertension, coronary artery disease, atrial fibrillation, deep venous thrombosis, peripheral arterial disease and above-the-knee amputation of bilateral lower extremities, was referred to oncology clinic for evaluation of lytic mass on right proximal humerus. Six months prior to initial presentation patient noted progressively worsening numbness over right shoulder associated with motor weakness associated with swelling over shoulder. X-ray of shoulder and CT of chest revealed a large area of lucency involving the right humeral head with an associated pathologic fracture through the proximal humeral shaft. Subsequent biopsy showed spindle cell neoplasm with osteoid formation concerning for osteosarcoma. Magnetic Resonance Imaging (MRI) showed a large syrinx in lower cervical and upper thoracic spine. Reviewing the pathological findings in the light of imaging studies, pathologist considered the spindle cell lesion could represent a reactive/reparative process. A diagnosis of neuropathic osteoarthropathy was therefore established.

Discussion Neuropathic osteoarthropathy, also known as Charcot joint, is a chronic degenerative arthropathy associated with decreased sensory innervation and pathologic fracture. Neurovascular denervation leads to joint destruction from repetitive trauma. Syringomyelia is a rare disorder involving a fluid-containing cavity (syrinx) within the spinal cord disrupting adjacent gray and white matter. Our patient had cervical and thoracic syrinx which attributed to the development of Charcot's joint. Relying solely on pathological findings would have resulted in delivering wrong and potentially hazardous treatment to this patient. It is imperative in cases like these to integrate clinical, pathological and radiographic findings not only to diagnose but also to treat these patients appropriately.

182 AN UNUSUAL PINEAL TUMOUR – PINEAL PAPILLARY TUMOR

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10.1136/jim-2015-000035.182

Case Report A 55 years old female presented to our facility after sustaining a ground level fall associated with weakness and gait abnormalities for 10 days. She reported having a headache and blurring vision following the fall. Physical examination was consistent with abnormal gait and decreased motor strength of 4/5 in bilateral lower extremities. Initial laboratory workup only revealed mild leukocytosis with neutrophils pre dominance, CT scan of the head showed 2.5×2.5 lesions obstructing the aqua duct with prominent hydrocephalus. MRI of the brain revealed pineal gland tumor with abnormal restricted diffusion suggestive of pineal parenchymal tumor or pineocytoma with moderate amount of hydrocephalus. CT chest, abdomen and pelvis revealed multiple, small few mm sub pleural densities in the lungs and a 5 mm enhancing lesion in left lobe of liver suggestive of metastasis. Bone scan was negative for bony metastasis. She underwent sub-occipital craniotomy and C1 laminectomy with placement of R parietal drain. Biopsy results came back positive for papillary tumor of the pineal gland with immunoperoxidase stain as diffuseand strong positive for vimentin; diffuse and moderately to strong positive for S100; CK-AE1/AE3 - 1–2% strong positive; GFAP, diffusely positive moderate; synaptophysin positive with diffuse weak to moderate and Ki67 as 20–30%. PLAP and EMA as negative. Patient was referred for inpatient rehabilitation post surgery. She was followed in the clinic following surgical intervention and was noticed to be improving steadily. She still has residual diplopia with occasional dizziness which has improved significantly after the surgery. Follow up CT scan showed reduction in size of sub-occipital pseudomeningocele.

183 USE OF N ACETYL CYSTEINE FOR PAINFUL CRISIS IN PATIENT WITH SICKLE CELL ANEMIA

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10.1136/jim-2015-000035.183

Case Report 27 years old African American male who was diagnosed with Sickle cell disease when he was 3 months old admitted at UMC hospital with Sickle cell pain crisis. The patient reports having 4–5 episodes of back pain every year mostly associated with sickle cell crisis. His usual pain controlling regimen consists of hydromorphone at his baseline along with hydroxyurea and folic acid. He has never had exchange transfusion, splenectomy or bone marrow transplantation. He has developed secondary hemochromatosis over the period of time from repeated blood transfusions. He was admitted in February 2015 at our hospital for the painful vaso-occlusive crisis with back pain and chest pain. The patient reported compliance with the pain medications and denied use of recreational drugs. He received last blood transfusion almost a month prior to this admission. Upon admission, he was in moderate distress; vital signs were significant for low grade fever of 100.1F, tachycardia with HR between 120–140/ min and O2 saturation of 90–92% on room air. Rest of the physical examination was normal. Laboratory findings were significant for elevated white cell count of 17 K; Hb was 10.7 g/dl with 31.4% hematocrit, MCV was 99, MPV was 7.2 with normal platelets levels. Reticulocytes count was 5.7 and sickle cells were seen on the peripheral smear. CMP was within normal limits except for elevated total bilirubin at 2 mg/dl with 1.5 mg/dl of indirect bilirubin. Serum Ferritin was 3156 and hemoglobin electrophoresis demonstrates the presence of 24% of hemoglobin A, 3% of hemoglobin F and a 63% of variant hemoglobin with migration consistent with hemoglobin S. Hemoglobin A2 was 3%. He was admitted for the management of painful crisis secondary to sickle cell disease. He was treated with IV fluids and IV hydromorphone and PO hydromorphone. His requirement for pain medications remained high as the pain was difficult to control. After reviewing the literature, we decided to treat the patient with N Acetyl Cysteine (NAC) at a dose of 150 mg/kg. Following the NAC infusion, we were able to take the patient off of IV hydromorphone and the pain was better controlled with PO hydromorphone. The patient was later discharged to home after 2 days of receiving NAC infusion.

184 SMALL CELL CANCER WITH RARE PRESENTATION AS BLADDER CANCER

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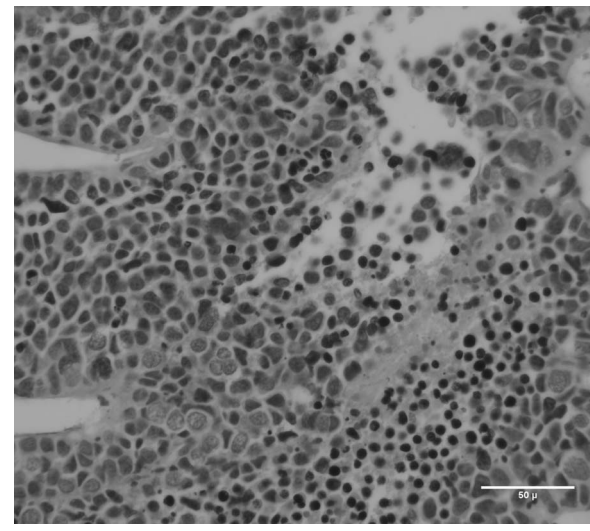
10.1136/jim-2015-000035.184

Case Report 66 y o man with PMH of HTN, smoking presented to our medical center with altered mental status, fever and low blood pressure. After initial treatment for urosepsis with aggressive hydration and early appropriate antibiotics patient recovered from delirium status. He then reported difficulty in urination, passage of blood in urine with lower abdominal discomfort and mass. Patient recalls feeling this mass around 2 weeks before his presentation. On examination he has multiple skin lesions that were concerning for skin breakdowns in the hip, R knee and ankle areas. Abdomen was distended with large palpable mass extending from mid to lower abdomen into the pelvis.GU exam was significant for gross hematuria, multiple petechial lesions seen at the groin area. Lab work was normal. UA showed large amount of blood with 33 K RBCs and 3 K WBC with small amount of leukocyte esterase & negative nitrites. CXR was within normal limits. CT abdomen and pelvis showed multiple hypodense lesions in the liver and spleen, a large heterogeneous mass of urinary bladder size of around 20 cm with air locules and linear calcifications along with moderate L sided ureterohydronephrosis. Urology planned for cystoscopy, bladder biopsy/ Trans urethral resection of bladder and L sided ureteral stent placement. Bladder resection was canceled because of the large size of the mass instead the biopsy was taken and b/l PC nephrostomy tubes were placed. Biopsy found positive for high grade small cell carcinoma of bladder.



Abstract 184 Figure 1

185 EXFOLIATE WITH LYMPHOMA: THE PARANEOPLASTIC PEMPHIGUS

G Tanios,[1] P Markwell,[1] K Shealy,[1] D Hammoud,[1] C Chalouhy,[3] E Chalhoub,[1] E Rinker[2]. [1]*Tulane University, New Orleans, LA;* [2]*Louisiana State University, New Orleans, LA;* [3]*Lebanese University, Beirut, Lebanon*

10.1136/jim-2015-000035.185

Case Report Paraneoplastic pemphigus (PNP) is a rare fatal skin blistering disorder occurring in association with a variety of neoplastic diseases most commonly Non-Hodgkin lymphomas (NHL). Prognosis is usually poor with minimal response to treatment and high risk of complications. A 58-year-old man with one year history of coexistent stage IV follicular lymphoma and multiple myeloma treated with Rituximab, Velcade and Bendamustine resulting in remission of both conditions, presented with one month history of a pruritic, painful desquamative rash. It started as a single blister on the right arm and gradually progressed to the arms, trunk, back, abdomen, legs and lately periorbital and perioral cavity with mucositis with crusting and erythema past the

vermillion border of the lip. Skin biopsy showed suprabasal acantholytic dermatitis suspicious for paraneoplastic pemphigus. This was confirmed with a direct immunofluorescence test showing deposition of IgG, C3 along the basement membrane correlating with high titers of desmoglein antibodies. Repeat myeloma panel was unremarkable. Bone marrow and lymph node core biopsies revealed recurrence of grade IIIA follicular lymphoma with a high proliferative index. He was started on high dose steroids and broad spectrum antibiotics along with aggressive daily dressing, but had no response to treatment. He then developed sepsis prohibiting chemotherapy with progression of mucocutaneous, periorbital and facial disease. He died 3 weeks later. In PNP, NHL induces an immune response with antibodies formation directed against epithelial antigens playing integral role in cell adhesion. Antibodies against periplakin and envoplakin are the most specific laboratory findings in PNP. Treating the underlying disease may or may not affect the disease process. Remission is usually slow and most patients succumb in three months to two years due to complications, with NHL cases harboring the worst prognosis. Treatment modalities include steroids, Rituximab and immunosuppressive medications, without strong supporting data. PNP in the setting of NHL is a rare but life-threatening complication. Treatment options are limited and further studies are required.

186 UNUSUAL PRESENTATION OF HIV RELATED LYMPHOMA MIMICKING KAPOSI SARCOMA

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10.1136/jim-2015-000035.186

Case Report The risk of developing NHL in the setting of HIV increases directly with the level of immune system dysfunction. Epstein-Barr virus coinfection is a risk factor and involved in the pathogenesis of subtypes of NHL. 57 year old male patient with history of AIDS on ART presenting with two months history of multiple tender subcutaneous nodules, started on the left neck, progressing to the trunk, back and abdomen, sparing lower extremities. He noticed right eye swelling headache and double vision. He was treated with antibiotics however with no response. Physical examination showed multiple tender and hard subcutaneous nodules of violaceous color and telangiectasia, more prominent on chest along with right eye chemosis, redness and proptosis. Imaging showed bilateral extraocular masses, pleural based nodules with hilar and mediastinal lymphadenopathy plus innumerable hepatic, bone marrow and soft tissue nodules.Pertinent laboratory results on admission showed normal White blood cell count of 6300 however with marked lymphopenia of 400 range, very low CD4 count of 54, LDH >3000,mild anemia and normal platelets with preserved kidney and liver function. A biopsy was taken from right neck nodule.Primary flow cytometry was favoring a poorly differentiated hematopoietic neoplasm. Subsequent tissue pathology showed high grade hematolymphoid malignancy most consistent with high grade diffuse large B-cell lymphoma with immunoblastic/plasmablastic features, EBV positivity,and high proliferation index. He was treated with palliative radiation therapy to the right eye however suffered a spontaneous tumor lysis syndrome resulting in multiorgan failure.The patient opted for comfort measures declining chemotherapy treatment and went home with hospice services. Kaposi sarcoma and non-Hodgkin lymphomas are common AIDS-defining malignancy. Cutaneous Kaposi can easily be mistaken as hematomas, angiomas or others. Large B-cell lymphomas with plasmablastic differentiation are unique heterogeneous entities mostly EBV positive with poor response to chemotherapy and short survival. Although they might share similar skin findings, KS and plasmablastic lymphoma are two separate entities, therefore diagnosis should be confirmed by biopsy.

187 PRIMARY METASTATIC TRACHEAL CANCER: A VERY RARE RESPIRATORY CANCER WITH DIAGNOSTIC AND THERAPEUTIC CHALLENGES AND NO CLINICAL TRIALS FOR DEFINITIVE MANAGEMENT

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10.1136/jim-2015-000035.187

Introduction Primary Tracheal tumors are very rare and constitute less than 0.1% of tumors. The most common histological form is Squamous cell cancer. Tracheal cancers have poor prognosis and no good clinical trials have been done to establish the recommended therapies for patients with localized or metastatic tumors.

Case Description We describe a 62 years old man with multiple comorbidities and a long standing history of smoking and alcohol intake who presented to ED with hematemesis/hemoptysis and melena. Upper GI workup didn't reveal any source of bleeding and suspicion of upper respiratory tract source was pursued with multiple endoscopies which revealed a bleeding mass in the upper part of the trachea 3 cm from vocal cords. Subsequent biopsy revealed squamous cell cancer in situ with focus suspicious for invasion. His bleeding was stabilized with Argon coagulation therapy. PET scan showed malignant tracheal cancer with no activity seen in left lower lobe nodule. After being assessed by oncology, radiation therapy was pursued and he underwent multiple sessions. Unfortunately, subsequent imaging studies and biopsy revealed treatment failure with metastatic lung lesions and recurrence of the local cancer. EGFR and alk mutations were both negative and the patient was not a candidate for targeted therapy. Single agent chemotherapy was later determined to be appropriate.

Conclusions Metastatic squamous cell cancer of the trachea can be treated as metastatic SCC of lung or head and neck, but data is lacking to support this fully. The prognosis is generally poor and although surgery can improve survival, it is only used in selected patients. Tracheal cancer is underdiagnosed and early diagnosis with access to interventional procedure can improve survival. Further research is needed to establish the proper management approach.

188 SKIN DEEP: A CASE OF NON-PSEUDOMONAL ECYTHMA GANGRENOSUM

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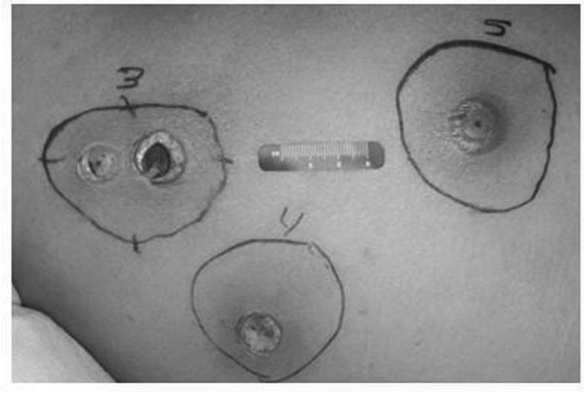
10.1136/jim-2015-000035.188

Case Report Introduction: This is the case of a patient with neutropenic fever, who developed a rash that was initially thought to be caused by a bacterial infection. Case Description: The patient is a 12 year old male, with a history of Ewing's sarcoma undergoing treatment, who was admitted for fever of neutropenia. He was found to have white blood cell count of 0.2 K/CCM and platelet count of 45 K/CCM. On the initial exam, he had several small red "bug bites" over his lower extremities. Per neutropenic fever protocol, blood cultures were obtained and he was started on Cefepime. Despite the antibiotics, he remained persistently febrile and antibiotic coverage was further expanded. The patient had remained neutropenic, febrile. The blood cultures remained negative.The serology fungal test, Galactomanin and Fungitell, were both negative. On the 4th of admission the mosquito bites started appearing necrotic and they resembled Ecthyma Gangrenosum. A skin biopsy was obtained from one of the lesions, which revealed numerous septate fungal hyphae, branching mostly at acute or right angles within the subcutaneous tissue. The patient completed a 3 month long course of IV antifungal therapy. Discussion: In most cases of fever of neutropenia, patients will be exclusively treated with antibiotics for the initial days. In this case, the patient's had a disseminated fungal infection, despite negative fungal serology. Galactomanin and Fungitell have high sensitivity and specificity, which is higher in patient with hematology malignancy. The key component to this patient's diagnosis was a positive skin biopsy. This patient's case reminds practitioners to have a high index of suspicion for fungal infections if no clinical improvement is noted.



Abstract 188 Figure 1

189 BRONCHO-DURAL FISTULA: A CASE THAT WILL BLOW YOUR MIND

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10.1136/jim-2015-000035.189

Introduction Pneumocephalus is defined as the presence of intracranial air and is a well described complication from trauma. Atraumatic causes of pneumocephalus are much less common and include excessive valsalva maneuvers, sinus disease, and neoplasm involving the face or sinus. This case demonstrates an unusual cause for atraumatic pneumocephalus and successful treatment with conservative measures.

Case Description A 53 year old male was evaluated in the ED for complaints of severe hea dache upon wakening. His history was significant for newly diagnosed squamous cell carcinoma of the lung and was currently undergoing treatment with concurrent Taxol/Carboplatin based chemotherapy and radiation therapy to a large right-sided pancoast tumor invading the cervical and thoracic spine. He had completed approximately 3/4 of this initial treatment when he presented to the ED. The patient was noted to be hemodynamically stable with an intact neurologic exam. Initial CT imaging of the head showed extensive pneumocephalus. Further imaging including MR Thoracic spine showed a mass-like fluid collection invading the T1 and T2 vertebral bodies. The mass in the right upper lobe contained air and fluid compatible with post-treatment changes. The combination of the above findings was compatible with a broncho-dural fistula. The patient was treated non-operatively with empiric antibiotics for meningitis. The patient's headaches resolved over several days. Unfortunately the patient died approximately two months later from respiratory failure secondary to progression of disease. Repeat MR brain days prior to his death showed resolution of the pneumocephalus.

Discussion Atraumatic pneumocephalus is a rare condition with the most common causes being valsalva maneuvers, sinus disease, or neoplasm. In this patient's case, post-radiation necrosis and neoplasm contributed to the development of a fistula from the lung to the subdural space resulting in pneumocephalus. Upon review of the literature, this is the first reported case of a broncho-dural fistula as a cause for atraumatic pneumocephalus. We can conclude that medical treatment rather than surgical management was an effective mode of therapy in this patient.

190 ATYPICAL PRESENTATION OF ADVANCED PANCREATIC CANCER

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10.1136/jim-2015-000035.190

Case Report The presence of malignant ascites signals advanced stage disease in a variety of cancers. While malignant ascites is commonly a manifestation of ovarian, breast, and some intra-abdominal malignancies, it is not as commonly a presenting sign in pancreatic cancer, ranging from 5–20%. Here we report a case of pancreatic cancer presenting with malignant ascites. A 68 year old male with hypertension, diabetes mellitus type 2, and stage 4 chronic kidney disease (CKD) presented to the emergency department with dyspnea and lower extremity edema. Associated symptoms included orthopnea and a 30 pound weight gain. Physical exam revealed jugular venous distension, bibasilar rales, a

tender, distended abdomen with shifting dullness, and 3+ pitting edema in bilateral lower extremities. He was admitted for acute kidney injury (AKI) on CKD with ascites. Upon admission, we began aggressive diuresis and ultimately, hemodialysis was initiated. While awaiting placement of a tunneled dialysis catheter, the patient developed abdominal pain. Further workup with abdominal ultrasound revealed ascites. Subsequently, paracentesis was performed and fluid studies revealed a serum albumin ascites gradient of 0.4, raising concern for malignancy or nephrotic syndrome. Cytology revealed atypical epithelial cells suspicious for malignancy and subsequent computed tomography scan revealed pancreatic tail and splenic lesions, as well as mesenteric carcinomatosis. Biopsy of the pancreatic mass confirmed adenocarcinoma. We consulted Oncology and after discussion of poor prognosis of stage IV adenocarcinoma of the pancreas, the patient elected to pursue palliative care. Diagnosing pancreatic cancer can be difficult, given the typical presentation with non-specific signs and symptoms, including weight loss, pain, and jaundice. It may also present with other less common signs and symptoms, such as ascites. Patients presenting with malignant ascites have a poor prognosis, with a median survival time of 2 to 4 months. This further illustrates the need for improved methods of diagnosis earlier in the course of disease. Although malignant ascites represents advanced stage disease, it is important to recognize so that palliative measures can be taken to improve quality of life.

191 EXTRAOSSEOUS EWING'S SARCOMA MIMICKING INFECTION

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10.1136/jim-2015-000035.191

Case Report Ewing's sarcoma of the chest wall most commonly presents in the second decade of life as a painful, palpable mass. This is an atypical case of a left pleural based mass concerning for infection that was ultimately biopsy proven to be Ewing's sarcoma. A 15-year-old Caucasian female presented with a 1-month history of dyspnea, left sided chest pain, and dysphagia. Review of systems revealed subjective weight loss and night sweats but no fever or cough. Physical exam was significant for 0.5 cm tender cervical lymphadenopathy bilaterally and tenderness to palpation over the left costal region. Laboratory evaluation was within normal limits. A chest radiograph and CT showed a left pleural based mass along left lateral chest wall with associated calcified left hilar nodes, concerning for an infectious process. There was no rib involvement or pleural effusion. A complete infectious work-up, including bronchoalveolar lavage and TB skin test, was negative. CT guided biopsy was performed and histopathology indicated small round cells, confirmed to be Ewing's sarcoma. Oncological staging was consistent with non-metastatic disease. After which, quantiferon gold blood test resulted positive, consistent with latent tuberculosis. In consultation with infectious disease, the decision was made to treat with four-drug therapy (rifampin, isoniazid, pyrazinamide and ethambutol) given her concurrent diagnosis of Ewing's sarcoma requiring intense, compressed cycles of chemotherapy with vincristine, cyclophosphamide and doxorubicin alternating with ifosfamide and topotecan. Ewing's sarcoma is the second most common malignant bone tumor in adolescents. Although it can occur anywhere, it most commonly occurs in extremity long bones, pelvis, and ribs. It rarely occurs in soft tissue, but when it does, it is referred to as extraosseous Ewing's sarcoma. The chest wall is a common location for extra-osseous Ewing's sarcoma, known as Askin tumor. Given the aggressive nature of this tumor and poor prognosis if metastatic at diagnosis, this case demonstrates that clinician's should maintain a high index of suspicion in teenage patients with a suspicious chest mass. As there is no recent data on the treatment of newly-diagnosed oncology patients with latent tuberculosis, this case highlights the complexities of concurrent agressive managment.

Infectious Disease, HIV, and AIDS
Joint Plenary Poster Session and Reception
4:00 PM
Thursday, February 18, 2016

192 FULMINANT COXSACKIE MYOCARDITIS

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Case Report: CASE A 59-year-old woman with past medical history of Takotsubo cardiomyopathy with full recovery of systolic function and tobacco abuse was referred to the Emergency Department (ED) from her primary care physician's office for tachycardia. She had initially presented to her PCP with 3 weeks productive cough with dyspnea not improved with doxycycline and cough suppressants. Upon evaluation in the ED, she was found be in atrial fibrillation with RVR by EKG without ischemic changes. She received several doses of IV diltiazem and metoprolol and went into a junctional rhythm. She subsequently developed worsening hypotension with cold extremities and sluggish capillary refill. Initial labs revealed an elevated BNP (1762 pg/mL) and mildly elevated troponin (0.031 ng/mL), which remained stable on repeat lab draws. Echocardiography (Echo) on admission showed a severely reduced EF of 10% without focal wall motion abnormalities. She was admitted to the ICU for suspected cardiogenic shock requiring multiple vasoactive agents and rapidly developed multi-organ failure requiring IPPV and RRT for acute respiratory and renal failure, respectively. Given the history of viral prodrome preceding admission, there was high suspicion for viral myocarditis precipitating her cardiomyopathy. Respiratory viral panel, HIV, hepatitis and legionella were all negative. Enteroviral panel returned positive for Coxsackie B2 and B6 antibodies. With supportive therapy her shock improved and she was extubated.

Discussion Viral myocarditis is an important cause of cardiomyopathy that requires a high degree of suspicion as it can present with a wide range of clinical manifestations, including chest pain, heart failure, arrhythmia or sudden cardiac death. EKG findings are typically non-specific. Classic echo findings include global hypokinesis with or

without pericardial effusion. Cardiac MRI can be useful in establishing a diagnosis. The gold standard for diagnosis is endomyocardial biopsy, which is invasive and therefore infrequently done. Treatment of viral myocarditis is aimed at the sequelae of the disease, including heart failure and arrhythmia according to current guidelines.

193 DISSEMINATED *CRYPTOCOCCUS NEOFORMANS* INFECTION IN A CHILD WITH CONGENITAL NEUTROPENIA

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Introduction *C. neoformans* is encapsulated yeast known for its tendency to cause multisystem disease in immunocompromised hosts, especially HIV+ patients. Typically it begins as a pulmonary or meningitic infection. It is rare for *C. neoformans* to present as an extrapulmonary or extrameningeal primary infection. Once identified, *C. neoformans* is treated with antifungals, specifically amphotericin B lipid complex (ABLC), fluconazole (FLC), or 5-flucytosine (5-FC), which are noted to have high efficacy rates.

Case Report A 14-month-old African American female with a past medical history of autoimmune neutropenia of infancy managed with weekly filgrastim(G-CSF), presented to the ER with neutropenic fever and flesh toned, firm, well-demarcated papulo-pustular skin lesions. The lesions quickly spread and became umbilicated papules. Disseminated *C. neoformans infection* was suspected and confirmed by the detection of Cryptococcal antigen in serum. Lack of CNS involvement was confirmed by a negative Cryptococcal antigen detection test in CSF. Immunologic work-up ruled out T-cell abnormalities and HIV infection. It was determined that congenital neutropenia was the most significant risk factor for her *C.neoformans* infection. The patient was placed on a 6-week course of ABLC with rapid improvement. One week prior to the completion of therapy with ABLC, the patient's neutropenia and skin lesions recurred. Following these events, her G-CSF dose was adjusted. FLC was then added for synergy, after which the lesions were noted to resolve quickly. Once the ABLC course was completed, the patient was continued on FLC for long-term prophylaxis. The duration of treatment with FLC will be determined based on the outcome of her congenital neutropenia.

Conclusion *C. neoformans* infection is more frequently diagnosed among patients with T-cell abnormalities. As illustrated by the clinical presentation of our patient, infection with this organism should also be considered in children with other immunodeficiency disorders, including congenital neutropenia.

194 *SALMONELLA* TYPHI BACTEREMIA ASSOCIATED TO SEPTIC SHOCK AND ACUTE RESPIRATORY SYNDROME IN A TEENAGE PATIENT

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10.1136/jim-2015-000035.194

Case Description A 16 year old previously healthy male was admitted with a 2-day history of abdominal pain, diarrhea and fever. Within 12 hours, *Salmonella* Typhi grew from his blood culture and he was initiated on ciprofloxacin and ceftriaxone. Blood cultures remained negative after beginning antibiotics. On hospital day 1, he developed septic shock and coagulopathy that initially responded to fluid resuscitation and blood products. He was transferred to the pediatric intensive care unit due to development of ARDS with severe hypoxemia and diffuse bilateral infiltrates on chest radiograph on hospital day 2. He worsened despite support with non-invasive positive pressure ventilation and required endotracheal intubation and mechanical ventilation. On Hospital day 3 he developed hypotension and shock that required multiple pressors. He developed a transudative pleural effusion that required thoracostomy tube placement. Diarrhea persisted and he developed a rigid abdomen. Abdominal computed tomography showed thickened bowel wall, ileal enteritis, and severe ascites but no perforation. Due to the severity of his illness, he received dexamethasone at high doses as recommended by the American Academy of Pediatrics Red Book (3 mg/kg followed by 1 mg/kg every 6 hours for a total of 48 hours). His ARDS and coagulopathy resolved, and he was extubated on PICU day 10. He received he completed a two-week course of ceftriaxone followed by a week of oral amoxicillin for a total 21 days of antibiotic therapy.

Discussion This case details severe complications of typhoid fever that are uncommon in developed countries. High-dose dexamethasone treatment has reportedly decreased *S.* Typhi mortality but controlled studies in children are lacking. Providers should include *S.* Typhi in the differential diagnosis of the pediatric patient with fever, severe abdominal pain and enteritis, and be aware of its potential complications and their management.

195 HERPES SIMPLEX VIRUS TYPE 2 MENINGITIS IN THE ABSENCE OF GENITAL SORES

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10.1136/jim-2015-000035.195

Case A 19-year-old woman initially presented to an outside facility with a primary complaint of dysuria and fever. A urinalysis was suggestive of urinary tract infection for which she was prescribed amoxicillin/clavulanate. Her Symptoms worsened by day 2 despite antibiotic and antipyretics, on day 3, she began having diffuse severe headaches accompanied with photophobia and nuchal rigidity. On presentation to our facility, the patient was alert and well oriented a detail medical history was obtained, patient endorsed being sexually active with one partner and stated using barrier contraception consistently; She denied ever being diagnosed with any sexual transmitted disease. Physical examination was concerning for meningitis but no other focal neurological were present. Genital exam did not reveal any lesions. Lumbar puncture revealed an opening pressure of 51 cmH2O, cerebrospinal fluid (CSF) was obtained; gram stain showed no organisms, white blood count of 855 with 70% lymphocytic, and 74 red

blood cells. The patient was started on Acyclovir empirically and her symptoms improved significantly in 24 hours. Herpes Simplex virus polymerase chain reaction (PCR) on the CSF was positive for HSV-2. Crypto antigen in CSF was negative, along with West Nile studies and CSF cultures. The use of PCR in suspected aseptic meningitis can help recognize HSV in the absence of genital lesions, as viral cultures may also be negative.

Discussion While Enteroviruses are the most common viral etiology for aseptic meningitis, HSV-2 meningitis has a prevalence of about 2%. HSV-2-associated meningitis is usually observed in the context of primary genital HSV-2 infection, therefore in the absence of these, the diagnosis may be quite challenging. The outcome of HSV-induced meningitis has been reported to be spontaneously favorable without the use of antiviral therapy in otherwise healthy hosts. The benefit of using antiviral therapy to treat HSV-induced meningitis is unclear but evidence supports immediate antiviral therapy and that antiviral prophylaxis for immunocompromised patients.

196 FATAL GAS IN THE STOMACH?

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10.1136/jim-2015-000035.196

Introduction Presence of gas in the wall of the intestine is called intestinalis pneumatosis and can occur anywhere from the stomach to the rectum. Stomach is the least common site of presentation (gastric pneumatosis), often with a high mortality rate.

Case presentation A 69-year-old lady with extensive stage small cell lung cancer presented with acute onset weakness, confusion and left upper quadrant pain. She was found to be hypotensive, tachycardic and hypothermic and with left upper quadrant tenderness. On laboratory examination she was found to have lactic acid of 8.4, white blood cell count of 7600/mm3 with 63% bandemia and large leukocytes and white cells in urine analysis. Hepatic function tests and lipase were normal. Broad-spectrum antibiotics were initiated and cultures sent. After 6 liters of intravenous fluid boluses, norepinephrine was initiated for refractory septic shock. Abdominal CT scan revealed gastric pneumatosis with gas in portal vein and splenic vein (Fig 1). Blood culture and urine culture later grew pan sensitive species of proteus mirabilis. Antibiotics were tailored to targeted therapy with ceftriaxone which was then transitioned to oral therapy.

Discussion We present the first reported case of emphysematous gastritis likely due to proteus mirabilis bacteremia induced septic shock. A benign form of gastric pneumatosis, known as gastric emphysema is thought to result from air dissecting in the wall of the stomach whereas emphysematous gastritis results from invasion of gas forming organisms through the mucosa and is often fatal. Other postulated mechanisms of gastric pneumatosis include mucosal damage, ischemia due to massive distension, caustic ingestion, instrumentation or migration from extragastric sources. No cases have been reported with this rare gas forming bacteria proteus mirabilis as the causative agent. No standard treatment is recommended. A retrospective study of intestinal pneumatosis by Morris et al showed 16% mortality in those with surgical treatment as compared to 6% in those without. In an immunecompromised patient with septic shock therapy should be focused on aggressive resuscitation, bowel rest and early broad spectrum antibiotics targeting gram-positive, gram-negative and anaerobic organisms.

197 A RARE MANIFESTATION OF DISSEMINATED STREPTOCOCCAL INFECTION RESULTING IN PURULENT PERICARDIAL EFFUSION IN AN IMMUNOCOMPETENT FEMALE

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10.1136/jim-2015-000035.197

Case Report In the modern era of antibiotics acute pericarditis leading to purulent pericardial effusion is rarely seen in immunocompetent patients. However, no prior cases of *S. pneumoniae* purulent pericardial effusion, secondary to hematogenous seeding, have been reported in immunocompetent patients. We report a case of 56-year-old female patient who presented to the emergency department (ED) with a primary complaint of three months of worsening left sided groin pain, along with acute worsening dyspnea. During initial ED evaluation vital signs were unstable with an electrocardiogram showing diffuse ST elevations. Echocardiogram revealed a massive circumferential pericardial effusion causing early tamponade physiology along with mild mitral regurgitation from posterior leaflet vegetation. An urgent pericardiocentesis was performed removing 400 cc of thick, purulent, pericardial fluid. Initial pericardial cultures remained negative, but blood cultures grew pan sensitive *S. pneumoniae*. Next day, a CT abdomen/pelvis and transesophageal echocardiogram was performed. A left psoas and iliacus muscle abscess was diagnosed revealing the etiology of the presenting complaint. Following drainage, gram stain and culture divulged *S. pneumoniae*. Full evacuation of the purulent pericardial effusion and pericardial window was performed by Cardiothoracic surgery, the same day, after transfer to our facility. Histologic interpretation showed lymphoplasmacytic inflammation with scattered neutrophils. Cultures remained negative. Initial management with ceftriaxone, was changed to benzathine penicillin 2 million units every 4 hours, per infectious disease recommendations. Most of the previously reported cases of disseminated streptococcal infection were seen in patients with predisposing conditions such as alcohol abuse, rheumatoid arthritis, malignancy or inherited disorders of immune systems such as complement deficiencies. Of note, this patient did not have any predisposing conditions. It is imperative to recognize patients, with acute pericarditis, who are at risk of developing pericardial tamponade. Since prompt treatment, ideally by a multi-specialty team, can improve outcomes.

198 KLEBSIELLA PNEUMONIAE LIVER ABSCESS, A CASE REPORT AND REVIEW OF LITERATURE

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10.1136/jim-2015-000035.198

Case Report Klebsiella Pneumoniae causes monomicrobial Liver abscess in the absence of hepatobiliary disease. It is sometimes associated with disseminated infections including meningitis, endopthalmitis. We present a case of Klebsiella pneumoniae Liver abscess with bacteremia. A 39 year old Vietnamese male with no past medical history presented with complaints of abdominal pain, nausea, vomiting, diarrhea and fever. Vitals at presentation include Temperature 37.3 C, Blood Pressure 118/84, Pulse 99 to 160 s, and Respiratory rate 40. A computed tomography (CT) of abdomen showed a large complex mass in the right lobe of the liver measuring 4.3×4.1×4.5 cm with multiple septations. The patient was admitted to medicine floor initially, but then had to be transferred to ICU due to respiratory failure. Blood cultures drawn at presentation and repeat cultures on hospital day 2 both grew Klebsiella pneumoniae. The patient was treated with intravenous antibiotics and the abscess was drained by interventional radiology. He progressed very well during his hospital course and was discharged from the hospital Once thought to be isolated to Southeast Asia, pyogenic liver abscess (PLA) caused by Klebsiella pneumonia (K.pneumoniae) is now seen across the World. The gram negative K.pneumoniae is a well-known pathogen that is identified in multiple disease processes, however, what makes K.pneumoniae PLA unique is the patient population afflicted, its virulence and diagnostic features. Asian ethnicity, recent antibiotic use, diabetes mellitus and impaired fasting blood glucose are the most important predisposing risk factors for developing K. pneumoniae PLA. Although males and those from Southeast Asia are over represented, PLA has been seen in all sexes and ethnicities. Presence of meningitis, visual symptoms, dyspnea, cough, chest pain, large abscess size all portend a worse prognosis and increased mortality. K1 K. pneumonia is the most commonly identified serotype seen in diabetics with invasive disease. Monotherapy with an extended spectrum penicillins, such as piperacillin-tazobactam, or the third generation cephalosporin ceftriaxone plus metronidazole are first line therapies. As with any abscess, prompt drainage with or without drain placement should be done early in the disease course

199 TB OR HISTOPLASMOSIS: WHY NOT BOTH?

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10.1136/jim-2015-000035.199

Introduction Immunocompromised patients are at risk for multiple opportunistic infections, often concomitantly. Diagnosis usually requires broad testing and workup.

Case A 36 year-old man with a history of HIV/AIDS and disseminated Histoplasmosis was referred to the Emergency Department from HIV clinic for tachycardia and fever. The patient had a recent positive PPD and was sent to get a chest x-ray. When a pleural effusion and loculated mass were seen, he was called with the result and told to present to the hospital to be admitted. Patient stated he had developed a chronic cough one month prior, but otherwise was asymptomatic. Of note, the patient's Histoplasmosis was diagnosed 8–12 months prior and was not fully treated. The patient was supposed to be taking itraconazole twice daily, but was only taking his nighttime dose due to nausea. His other medications included emtricitabine, tenfovir, dolutegravir, and dapsone/azithromycin for prophylaxis. He was not homeless, denied any TB contacts, but did report a remote history of incarceration 10 years prior. On exam vital signs were significant for tachycardia (Pulse 120–130 BPM) and temperature 100.5oF. Physical exam was unremarkable except for coarse breath sounds bilaterally. CT scan obtained showed bilateral granulomatous nodules, a large cavitary lesion in the right upper lobe, and mediastinal lymphadenopathy. Pulmonary performed a thoracentesis. AFB cultures were positive and fungal cultures were pending. A urine Histoplasmosis antigen resulted positive. ID was consulted and patient was determined to have both TB and Histoplasmosis. He was started on RIPE therapy as well as itraconazole, and discharged with close follow-up after a 2 week course of treatment and two subsequent negative AFB smears.

Discussion Pulmonary Histoplasmosis presents with various clinical symptoms. In the setting of cavitary lesions, at least 12 months of antifungal therapy are required. This is normally seen in immunocompromised individuals. Tuberculosis in a patient with HIV is generally treated with RIPE therapy, with rifabutin sometimes substituted for increased efficacy.

200 NEUROSYPHILIS MASQUERADING AS HEADACHE AND SYNCOPE

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10.1136/jim-2015-000035.200

Introduction Although once common, neurosyphilis is a rare manifestation of Treponema pallidum infection. Symptoms vary depending on early vs. late forms, with early affecting the CSF, meninges, and vasculature and late affecting the brain parenchyma and spinal cord.

Case A 61 year-old woman with history of type 2 diabetes, hypertension, asthma, and TIA presented to the Emergency Department with complaints of daily frontal headaches described as throbbing and radiating to occipital area without visual disturbances. On the day of admission, the patient felt nauseated and subsequently passed out for 30 minutes. Witnesses denied seizure-like activity, and noted that upon arousal patient was confused and disoriented. Review of systems was notable for weakness of lower extremities and paresthesia of her hands, both of which improved shortly after. Three months prior, patient was diagnosed with a TIA based on a similar episode where she experienced 30 minutes of right-sided weakness and facial droop. A MRI was contraindicated due to a metallic plate in her left orbit. On admission, patient's neurological exam

was unremarkable. Vitals signs were stable and negative for orthostatic hypotension. Syncope workup was unremarkable, with a normal EKG and Echo, negative head CT, and stable blood sugars. Lab studies revealed a positive RPR 1:16. Chart review showed that her VDRL on lumbar puncture (LP) 3 months prior after TIA workup was positive 1:2, but only resulted after discharge. The patient began a 14-day course of IV Penicillin G with symptomatic improvement. A repeat LP was deferred for 6 months to evaluate for treatment response.

Discussion Clinical suspicion and CSF analysis are key for diagnosing neurosyphilis in a patient with unknown history. Nontreponemal tests may be nonreactive in late syphilis, making FTA-ABS and syphilis EIA more sensitive. IV Penicillin G for 10–14 days is the recommended treatment, with serial LPs three to six months after treatment until the CSF white blood cell count is normal and the CSF-VDRL is nonreactive.

201 AN UNUSUAL CASE OF ORBITAL CELLULITIS

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10.1136/jim-2015-000035.201

Case Report We present a 20 yo m with CC of mild swelling of left eye of 4 days duration with redness of the surrounding skin, and green discharge. Pt stated that 4 days prior he noted left eye swelling with green discharge followed by headaches, photophobia, loss of vision and finally pain with eye movements. He also complained of subjective fevers, night sweats, rigors and chills. Pt denied any trauma to the eye or sick contacts. On PE pt had left eye: proptosis, edema, erythema extending to inferior border of eyebrow to inferior border of the orbit marked tenderness with yellow discharge. Mechanical opening of eye showed marked conjunctiva injection and edema. Visual acuity could not be assessed due to conjunctiva swelling. IOP was WNL. Lab results were significant for leukocytosis of 15 k and ESR of 10. The remainder of the labs was unremarkable. CT scan revealed possible left periorbital and orbital/postseptal cellulitis, with abscess overlying the cornea and inflammation of the left lacrimal gland. Further history revealed the pt was promiscuous with males and females. Pt was continued on cephalexin and moxifloxacin eye drops with analgesia with improvement of inflammation. Gram stain was positive for gram-negative diplocci and culture was positive for Neisseria gonorrhea. The patient was discharged home one oral and topical antibiotics and to follow up with ophthalmology. It is important to distinguish between periorbital and preseptal cellulitis, as the complications, treatments and outcomes are immensely different. However, in this case it was determined that the patient had both by evidence of CT. Although bacterial rhinosinusitis is the most common cause of orbital cellulitis our patient had no symptoms or signs on CT. We believe that this patient had a less common cause being dacrocystitis. Staphylococcus and Streptococcus are the most frequently isolated however as in this case Neisseria Gonorrhea was isolated which is much less frequent. Clinically the distinguishing feature of orbital cellulitis is pain on eye movement, proptosis and opthalmoplegia. Complications of orbital cellulitis include subperiosteal abscess, cavernous sinus thrombosis, orbital abscess, extra-orbital extension and vision loss as in this case.

202 MULTIPLE BRAIN ABSCESSES DUE TO STREPTOCOCCUS MILLERI

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10.1136/jim-2015-000035.202

Case Report A 64yo man with chronic sinusitis and chronic coccidioides lung infection presented with 1 month of headache. He then developed sudden acute right-sided hemiplegia, lethargy and confusion. He had no recent fever, sweats, chills or other neurologic complaints. CT of the head revealed multiple enhancing lesions confirmed by MRI showing perilesional vasogenic edema. His CRP was 47.9 (<1) and ESR 39. CSF: protein 84, glucose 135, WBC 300, predominantly monocytes and the Gram stain showed gram positive cocci in chains. Blood cultures were negative. The patient was treated with antibiotics and amphotericin. CT-guided brain biopsy grew S*treptococcus milleri*. Further workup including TEE, CT of the chest, abdomen and sinuses were negative as were antibody/antigen studies. Teeth with caries were removed but cultures were negative. The patient made a slow but near total recovery with antibiotifcs and aggressive PT/OT.

Discussion A brain abscess can form as a complication of systemic infection, trauma, or surgery. Bacteria invade the brain either by direct spread from a contiguous site such as teeth or sinuses or through hematogenous seeding of pathogens from bacteremia. Direct spread of organisms usually causes a single brain abscess while hematogenous seeding leads to multiple abscesses. Our patient's lesions suggest hematogenous spread was the most likely mechanism. Our patient's clinical presentation was fairly typical with headache being the most common symptom, occurring in 69 percent of patients and focal neurologic deficits in 50 percent. The neurologic deficits usually occur days to weeks after the onset of headache. *Streptococcus milleri* is part of the normal flora of the human oral cavity and GI tract and is a recognized cause of brain abscesses. Our patient had chronic sinusitis and poor dental hygiene which may have contributed to hematogenous seeding of the infection. Although brain abscesses have a high mortality rate without treatment, the prognosis of patients with brain abscesses has gradually improved over the years. A successful outcome, as seen in our patient, requires a high index of suspicion, accurate diagnosis and prompt treatment.

203 AN UNFORTUNATE CASE OF AORTIC TISSUE INFECTION FOLLOWING ENDOVASCULAR REPAIR

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10.1136/jim-2015-000035.203

Case Report We present the case of a 21-year-old Caucasian male with history of motor vehicle collision with extensive traumatic injuries that required substantial operative intervention, including left nephrectomy, splenorrhaphy, and surgical repair of his left distal tibia and fibula. During his rehabilitation, the patient developed left-sided pleural effusion and chylothorax that was drained with pigtail catheter placed with CT guidance by interventional radiology. Imaging noted evidence of a 1.7×1.2 cm aortic pseudoaneurysm, previously undetected, but presumed to be a consequence of his prior trauma. The patient was scheduled for TEVAR and this procedure was performed also by IR in combination with vascular surgery. It took several weeks for his chylothorax to clear, and he was discharged to home. He returned to the emergency department two months later with right upper back pain, associated with dyspnea and low-grade fever. Exam revealed only pain and tenderness of the right shoulder. His fever climbed to 103.1F while in the ER, and his labs returned with a WBC count of 12.6, 8% bands, and his ESR and CRP were markedly elevated. Imaging revealed small left-sided pleural effusion, but no PE and no pneumonia. He was admitted to internal medicine for back pain and started on empiric antibiotics for epidural abscess. Initially he refused or could not tolerate MRI. Blood cultures grew MSSA. Exam performed by infectious disease staff revealed decreased breath sounds of the left base, and repeat chest x-ray showed a moderate-sized pleural effusion surrounding consolidated lung. Pleural studies suggested an exudate, but no empyema. Follow-up chest CT showed complete collapse of the left mainstem bronchus from extraluminal hemorrhage from around his aortic graft leading to a hematoma. He was rushed to the OR for CT surgery and had excision and debridement of MSSA-infected aortic tissue that had given way to the hemorrhage and hematoma that caused an obstructive pneumonia, exudative pleural effusion, and led to the back pain that he complained of. This patient was fortunate to survive. His endograft was replaced, he was given IV nafcillin for 8 weeks along with rifampin, and placed on oral antibiotics for long-term suppression.

204 TOXIC SHOCK SYNDROME: A COMPLICATION AFTER SKIN BIOPSY

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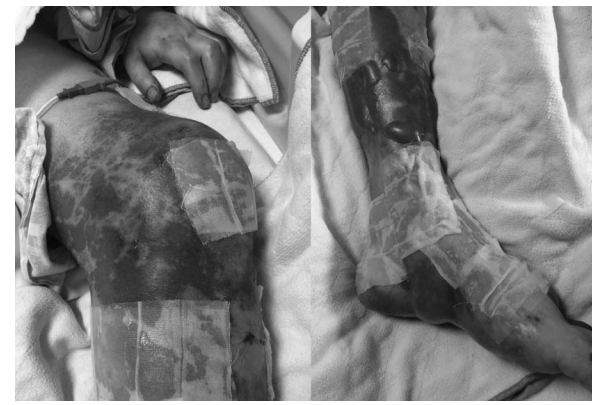
10.1136/jim-2015-000035.204

Introduction Toxic shock syndrome(TSS) is usually triggered Staphylococcus aureus and Streptococcus pyogenes as their toxins can have devastating life-threatening consequences. We present a rare case of TSS as conscequnce of skin biopsy.

Case A 70 years old male with a history of diabetes mellitus presented to the hospital with complaints of nausea, vomiting,abdominal pain. Onset of symptoms occured the day following a skin biopsy. On exam he was hypotensive (85/60) and tachycardic (122). Physical exam revealed widespread mottled skin and progressive cyanotic discoloration in digits of both hands and feet.Labratory data showed renal failure(BUN/Cr 85/6.5), leukocytosis ($21{,}000\times10^9$/L), thrombocytopenia ($18{,}000\times10^9$/L), PT (13 sec), PTT (32 sec), INR (1.02), haptoglobin (140 mg/dL),fibrinogen (312 mg/dL). No acute finding on Chest x-ray or MRI of head.He was intubated on site.Further lab workup of Platelet factor 4, serotonin release assay, ADAMTS13, coxsackie A/B antibodies (ab), E. Chaffeenis IgG/IgM, Parvovirus IgM,Rocky Mountain Spotted Fever IgG/IgM ab, ANA, Anti-smith, Anti-mitochondrial, Anti-Jo-1 ab and Anaplasma phagocytophilum ab were insignificant.CSF analysis and Blood cultures showed no abnormality.He recovered over a period of 4 weeks with agressive fluid hydration and broad spectrum antibiotics.



Abstract 204 Figure 1

Discussion TSS typically presents as an acute which often results in multi-organ failure.Diagnosis is characterized by fever >102, rash, hypotension, multiorgan failure,and desquamation within 2 weeks of onset of acute illness. Unfortunately TSS is underdiagnosed especially early in its course.This case illustrates the difficult diagnosis of toxic shock syndrome and the importance of early diagnosis.

205 FEVER IN A RETURNING TRAVELER FROM AFRICA

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10.1136/jim-2015-000035.205

Case Report A 52 year old Caucasian male was admitted for evaluation of a 4 day history of fever, abdominal cramps, nausea, vomiting, bloody diarrhea and body aches, which had developed while he was working in Equatorial Guinea. On the fourth day of symptoms, he returned to the United States. Past medical history was significant for hypertension, chronic low back pain and herniated nucleus pulposus. Social history was notable for the fact that he was an off shore oil rig worker off the coast of Guinea, had a 40 pack-year smoking history and drank beer on weekends. He had been taking doxycycline for malaria prophylaxis. Physical examination revealed a temperature of 99.9 ^{0}F, heart rate 140, respiratory rate 28 and normal blood pressure. Pertinent positives included dry mucus membranes, icterus, and tenderness to palpation over the left upper quadrant of his abdomen. Abnormal labs

included low hemoglobin of 11 G/dl, platelet count of 11 K/uL, AST 51 U/L, ALT 80 U/L, total bilirubin 2.6 mg/dl and blood glucose 50 mg/dl. Thick and thin blood smears showed the presence of multiple ring forms of *Plasmodium falciparum* with parasitic index of 24 %. Hospital course was complicated by development of altered mental status. The patient was diagnosed with severe *Plasmodium falciparum* malaria, and treated with intravenous quinidine for 2 days, plus exchange transfusions. After clinical improvement and reduction of parasitemia to less than 1%, he was transitioned to oral quinine and clindamycin for 7 days.

Discussion Malaria remains one of the most common causes of fever in travelers returning to the United States. *Plasmodium falciparum* malaria can cause more acute and severe forms of malaria than other species. Complications of falciparum malaria include cerebral malaria, renal failure, hypoglycemia, pulmonary edema, severe anemia, and shock. Severe malaria can present with hyperparasitemia, defined as a parasitic index greater than 10%. Early identification and prompt therapy with IV quinidine is the key to successful outcomes.

206 A CASE OF GRAM NEGATIVE *ENTEROBACTER CLOACAE* INFECTIVE ENDOCARDITIS

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10.1136/jim-2015-000035.206

Case Report Gram negative bacteria (GNB) infective endocarditis (IE) by non-HACEK (Haemophilus, Actinobacillus, Cardiobacterium, Eikenella, or Kingella species) organisms is rare. Only 27 known to be caused by *Enterobacter cloacae*.[1 2] Unfortunately, non-HACEK IE is extremely severe. Increased drug resistance along with lack of treatment recommendations further complicate these cases. As the number of patients receiving invasive procedures increases, the cases of gram negative non-HACEK IE is expected to rise.[2] A 63 year old female with past medical history of nephrolithiasis, presented to the ED with sudden onset left sided weakness and confusion. Significant admission labs included troponin of 0.112, white blood cell count of 14.9×10^9/L, and positive urine culture for *Enterobacter cloacae* >10,000 colonies/mL. Blood cultures were negative but were obtained after one dose of Ceftriaxone. MRI studies revealed multiple embolic strokes. Soon after admission, patient went into acute respiratory failure and became hypotensive requiring ICU admission. Transthoracic echo revealed aortic vegetation of 2.1×1 cm. Antibiotic therapy included Vancomycin, Cefepime, and Gentamycin. Patient had aortic value replaced with bioprosthetic value. Tissue culture of native valve grew *Enterobacter cloacae*. However, patient's clinical course was complicated by aspiration pneumonia, septic shock, ARDS, and eventual pulmonary hemorrhage. Due to poor prognosis, patient was made DNR and expired. Multiple treatment approaches exist for non-HACEK GNB. Some specialist recommend surgical management by replacing native valve along with greater than 6 week therapy of combination β-lactams and aminoglycoside. However, mortality rate has been reported as identical in surgical and non-surgical cases. Due to the lack of case studies no generalized treatment guidelines are available.[2 3]

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207 RECURRENT SALMONELLA MENINGITIS DUE TO AN UNFORSEEN FOCUS OF INFECTION

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10.1136/jim-2015-000035.207

Case Report *Salmonella panama* is a virulent, non-typhoid bacterium reported in the literature to be strongly associated with invasive infection, including meningitis. Several cases have been reported over the past 20 years, demonstrating that this species mostly presents in young neonates, infants less than 3.5 months old, and immune compromised patients. We report a case of recurrent meningitis due to *Salmonella panama* in a 69-day-old AAM. The patient presented to an OSH with salmonella meningitis at 5 weeks of life, where he was treated for 21 days with IV ampicillin. Two weeks after treatment was completed, he presented to our hospital with a history of fever and irritability. He was again diagnosed with meningitis due to salmonella. Infectious disease was consulted for recurrent meningitis with an uncommon organism. Although initial cultures from the OSH demonstrated sensitivity to ampicillin, ceftriaxone was empirically started pending repeat CSF cultures. A brain MRI was obtained to rule out intracranial abscess formation, as this has been a reported complication of *Salmonella panama*. It was normal. Upon further examination, the patient was noted to have decreased movement of his right lower extremity (RLE). A skeletal survey was obtained and showed periosteal thickening concerning for possible osteomyelitis of the R mid-distal femur. MRI of RLE was performed and confirmed osteomyelitis in the R femur. Due to this unusual case, testing to rule out sickle cell disease and HIV was obtained and was negative. The first reports of invasive *Salmonella panama* infection were made in the 1940's. In 2006, one of the first reports of *Salmonella panama* involving an infant older than 3.5 months was reported in the United States. In 2011, the CDC reported a multistate outbreak of *Salmonella panama* due to contaminated cantaloupes imported from Guatemala. Similarly, our case highlights the invasive nature of *Salmonella panama* and urges physicians to explore for multiple sources of recurrence. The primary source of infection is not clear in our case. One could argue that bacteremia resulting in meningitis led to osteomyelitis or that osteomyelitis was the primary infection site. It can likely be concluded that the recurrence of meningitis in this case was due to an osteomyelitis that persisted secondary to an inadequate length of treatment.

208 STREPTOCOCCUS PNEUMONIAE MENINGITIS AND SUBDURAL COMPLICATIONS

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10.1136/jim-2015-000035.208

Case Report The incidence of *Streptococcus pneumoniae* meningitis has decreased since the advent of vaccinations, but it remains a leading cause of meningitis worldwide. Patients with pneumococcal meningitis can experience multiple neurologic sequelae. Subdural effusions and empyemas are common sequelae of pneumococcal meningitis and have been reported in up to 40% and 10–20% of pediatric patients, respectively. Subdural complications of meningitis are more likely to cause neurologic abnormalities. We describe two pediatric patients with subdural complications in the setting of pneumococcal meningitis. A 6 month old female presented with fever and a prolonged focal seizure that progressed to status epilepticus. The patient was found to have pneumococcal meningitis and was treated with a 14-day course of ceftriaxone. She was subsequently diagnosed with profound right sensorineural hearing loss and remains on daily antiepileptic medication. During routine imaging for evaluation of her hearing loss, she was found to have bilateral subdural effusions and is being monitored as an outpatient by neurosurgery. A 5 month old female presented with fever and seizure-like activity. She was diagnosed with pneumococcal meningitis and started on vancomycin and ceftriaxone. Despite antibiotics, she remained persistently febrile and developed focal seizures that progressed to status epilepticus. Brain MRI revealed bilateral subdural empyemas, drained by neurosurgery. The patient's fevers resolved following surgery, and she had no further seizures. She was discharged home on Phenobarbital with no notable neurologic deficits. The risk of subdural effusions and empyemas is less common in children than adults. Still, the high incidence of subdural complications in pediatric patients with pneumococcal meningitis validates the use of neuroimaging for cases of focal neurologic deficits, seizure activity, or prolonged fevers despite antibiotic therapy. Subdural abnormalities must also be considered in patients with persistent symptoms, especially when no neurologic improvements are noted. Our patients highlight the importance of maintaining a high index of suspicion for intracranial changes that may alter the treatment course or mandate surgical intervention, reducing long-term sequelae that would result if these subdural complications went undetected.

209 *STREPTOCOCCUS ANGINOSUS* URINARY TRACT INFECTION WITH INTRARENAL ABSCESS

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10.1136/jim-2015-000035.209

Case Report A 16 yo F with Charcot Marie Tooth muscular dystrophy and severe FTT (weight=20 Kg) presented to hospital for observation after G-tube placement. Once tube feeds were titrated up to goal, the patient developed a significant increase in AST/ALT and decrease in Phos concerning for refeeding syndrome. She was kept inpatient to adjust feeds and correct electrolyte abnormalities. During this time the patient's abdomen was only mildly tender to palpation around the G-tube site with no signs of infection. After electrolyte correction and tolerating feeds, the patient spiked a fever to 38.4 C and her abdominal pain worsened with diffuse tenderness. Labs were obtained revealing WBC 9.9, CRP 20, CXR wnl, KUB showed only moderate stool burden. Blood and urine cultures were also obtained. The U/A revealed 3+LE and WBCs>100, therefore broad spectrum antibiotics of Ampicillin and Tobramycin were instituted. The antibiotics were deescalated to Ampicillin alone when the urine culture speciation returned with Strep Anginosus. Due to the association of Strep Anginosus with the formation of an abscess, a CT abd/pelvis w/ contrast was obtained. It revealed a 10 mm focal area of hypodensity in L kidney interpreted as a renal abscess, bilateral kidney enhancement concerning for pyelonephritis, and an 8 mm stone in L renal pelvis. The patient was clinically improved after 1–2 days on IV antibiotics, transitioned to PO antibiotics after 1 week and discharged to long-term rehab facility for physical therapy. She will have close follow up with Urology to treat her kidney stone after completion of antibiotic course.

Conclusion This report describes *Streptococcus anginosus* UTI in children, which has been only infrequently reported previously. In addition, the report emphasizes the association of recovery of this species with the need to search for pyogenic infection and abscess formation.

Medical Education, Medical Ethics, and Advocacy
Joint Plenary Poster Session and Reception 4:00 PM
Thursday, February 18, 2016

210 IMPROVING RESIDENT EDUCATION TO INCREASE BREASTFEEDING RATES IN A RESIDENT RUN PEDIATRIC CLINIC: A QUALITY IMPROVEMENT PROCESS

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10.1136/jim-2015-000035.210

Purpose of Study The AAP has acknowledged the lack of formal breastfeeding education in pediatric residencies in recent years. UT Houston pediatric residency has responded by mandating hands on training as well as completing an online educational course. In this study, we aim to evaluate whether breastfeeding counseling by a trained resident can increase rates of breastfeeding in an academic primary care clinic.

Methods Used There were 97 mother-infant pairs included in the study. A retrospective chart review was performed on singletons born between January 2015-March 2015 to establish a baseline breastfeeding rates in the hospital, early follow up, 2 weeks, 2 months and 4 months. From July to August 2015, all term babies seen for either early follow up or the 2 week well child check received breastfeeding counseling, an informational pamphlet and were referred for

outpatient breastfeeding support. The 2 groups were compared to estimate the educational interventions' effectiveness as a method of increasing breastfeeding rates.
Summary of Results There were no significant differences between the groups for infant gender, birth weight, type of delivery, or age of the mother. The results of this evaluation were positive for exclusive breastfeeding, with group comparisons showing a significant increase in exclusive breastfeeding rates at the 2 month time point (pre-intervention at 16% vs post-intervention at 30%).
Conclusions Our patient population within an academic resident continuity clinic has lower rates of breastfeeding initiation than the national average. There was an increase in exclusive breastfeeding rates after implementation of formal resident education. The improvement was not statistically significant, but the rate of decline increased. Moreover, the impact was clinically significant to the mother-infant dyads that benefited from additional support. Families who receive care in an academic pediatric care setting that gives its residents hands on training may have increased rates of exclusive breastfeeding.

211 MEDICAL GENETICS EDUCATION IN PEDIATRIC TRAINING PROGRAMS: PROGRAM DIRECTORS' OPINIONS

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10.1136/jim-2015-000035.211

Purpose of Study Pediatricians are often the first medical professionals to encounter patients with genetic disorders, yet many pediatricians are uncomfortable with ordering genetic testing and counselling families regarding genetic conditions. However, given the limited availability of medical geneticists nationwide and the anticipated increase in genetic testing, pediatricians will be expected to have a significant level of competency in medical genetics. Our goal was to explore exposure to medical genetics topics in pediatric training programs.
Methods Used A survey was sent by email to 190 Pediatric Program Directors. Questions were asked regarding the quality of medical genetics education at their respective programs and the clinical settings in which pediatric residents gained exposure to core medical genetic topics that are listed in the American Board of Pediatrics (ABP) Content Specifications.
Summary of Results Of the 190 PDs contacted, 28 completed the survey. 50% of respondents agreed or strongly agreed that medical genetics education should be increased within pediatric training programs, despite the fact that 82% of respondents believed trainees at their programs receive average to excellent exposure to medical genetics. Additionally, on only 4/14 topics did PDs believe that their trainees received sufficient exposure. Clinical settings in which trainees received exposure to core ABP topics varied, with clinical genetics rotations and didactic lectures being most commonly cited. Inadequate time during training, poor access to medical geneticists, and lack of trainee interest were cited as barriers to implementation on effective education in medical genetics.
Conclusions Our study adds to a growing body of literature on the challenges of implementing genomic medicine into primary care and suggests that pediatric residency PDs question whether their trainees get adequate exposure to medical genetics and are interested in increasing education in medical genetics for their residents. Challenges faced by training programs echo those expressed by primary care providers regarding the use of medical genetics in primary care.

212 HANDLING THE HANDOVER: THE CREATION AND IMPLEMENTATION OF A RESIDENT HANDOVER CURRICULUM

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10.1136/jim-2015-000035.212

Purpose of Study Adequate resident patient handover has become essential to the practice of medicine in the age of duty hour restrictions. Significant patient care safety issues arise when patient information is not shared in a timely, thorough, and detailed process and has been well established in the relevant literature. Lack of standardization in this process leads to wide variation in the quality of resident checkout given and received. Other institutions have implemented a standardized handoff approach and shown a decrease in adverse patient events. There is currently no standardization or routine evaluation of the OU pediatric resident handoff process, and this has been repeatedly identified as an area of weakness by both resident and faculty surveys. In answer to this locally identified problem with a well-established solution, we are creating a longitudinal resident handover curriculum this year with our pediatric residents as relates to both verbal and written handover.
Methods Used Using Kern's approach to curriculum development, a handover curriculum was created to address our local resources and needs. Faculty and resident needs assessment surveys were completed and demonstrated both a need for didactic knowledge and practical skills application. A knowledge-based lecture was created, and future plans include faculty development, creation of a faculty role-playing/resident feedback conference, and repeated observations of resident handovers using a written and verbal observation checklist tool.
Summary of Results Currently no data to analyze has been collected. Presentation would include information gathered from needs assessment and tools used in didactic teaching and observation. Will likely have initial handover observation data analysis completed by conference presentation.
Conclusions With the advent of duty hour restrictions, adequate and efficient patient care handovers are more important than ever. No gold standard curriculum exists for resident education, and many institutions are struggling with this component of resident education. The description of our program's curriculum creation methods may be beneficial to other institutions who are in a similar situation.

Neurology and Neurobiology
Joint Plenary Poster Session and Reception
4:00 PM
Thursday, February 18, 2016

213 SPONTANEOUS RESOLUTION OF TRAUMATIC SPINAL SUBDURAL HEMATOMA WITH CONSERVATIVE TREATMENT

JJ Audry, M Petersen, A Perez. *University of Mississippi School of Medicine, Jackson, MS*

10.1136/jim-2015-000035.213

Background Spinal subdural hematomas are especially rare and may be related to surgery, vascular malformations, trauma, lumbar punctures or bleeding disorders. The subdural space is a potential space in the spine that lacks a large plexus of vessels in comparison to the venous plexus of the cerebral subdural space- thus explaining the rarity of the pathology.

Case description A seventeen year-old male sustained a mild concussion playing high-school football. He had emesis following the event. Patient was taken to Baptist hospital where a CT scan came back normal. During subsequent days, the patient had a persistent headache involving the entire head which subsequently moved predominantly to the left side. He was sent to UMMC for a neurosurgery consult with Dr. Luzardo. Originally, rupture of spinal vascular malformation was suspected, but MRI with contrast confirmed a subacute subdural hematoma at distal aspect of the thecal sac with lobulated subdural collection beginning at the level of T10-T11 and extending through L1-L2. At S1, it completely encircled the nerve roots and arachnoid with no cord compression. On physical exam, he was neurologically intact with no bowel or bladder issues and reported back pain associated with the headaches, weakness and progressive difficulty with gait. The patient also reported that forward flexion of his neck produced buttock pain. Patient advised to refrain from physical activities. Two months later, patient was followed-up in clinic with repeat MRI, showing subdural hemorrhage in the thoracolumbar spine was completely resolved as well as symptoms.

Conclusion This case demonstrates that rapid spontaneous resolution of traumatic thoracolumbar subdural hematomas can be achieved with conservative treatment. Although the mechanism is still not fully understood, it may be attributed to progressive redistribution of subdural blood to areas of thoracolumbar spine which require the most blood supply. The presence of a concurrent cerebral subdural hematoma would explain the source of the blood. In this case, it is likely that the source of blood was from a co-existing cerebral subdural bleed; however, imaging of the head was not obtained. Another possibility, although unlikely, is the penetrance of the arachnoid by a subarachnoid vessel rupture.

214 AN INTERESTING CASE OF ALTERED MENTAL STATUS

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10.1136/jim-2015-000035.214

Case Report A 42 year old female with PMH of ESRD, Type 2 diabetes mellitus, hypertension, and hyperlipidemia presented to the ED for altered mental status. Patient has history of noncompliance with dialysis and has been admitted multiple times for altered mental status that resolves after dialysis. Patient was dialyzed and was back to her baseline mentation, AAOX3. Patient was being treated for osteomyelitis of the right foot. Six days after admission nurses noticed an acute change in mental status and called a rapid response. Patient's vitals were in normal range. Physical exam was remarkable for new resting right handed pill rolling tremor and aniscoria, right eye 8 mm and left eye 5 mm, both with normal pupillary reflex. Due to physical exam finding stat CT head was ordered which was normal. MRI and MRA were also normal. Abnormal BMP values were BUN and Creatinine but were lower than her admission values. Glucose, CBC, TSH, calcium, and ammonia were in normal range. STAT EEG was ordered which revealed nonconvulsive status epilepticus. Patient was given 2 mg of Ativan and status resolved. She was then loaded with Dilantin and transferred to neuro ICU. Altered mental status has a large differential including seizures. Nonconvulsive status epilepticus is defined as a condition of ongoing or intermittent seizure activity without convulsions for at least 30 minutes, without return of consciousness between attacks. In comatose patients the prevalence is around 8%. Diagnosis can be challenging as physical exam findings, if any, are subtle. Our patient had both negative symptoms with mutism and positive symptoms with right handed tremor. The prognosis is worse than convulsive status likely due to under diagnosis. In this patient the presumed cause was medication, she was on cefepime and ultram. Due to high mortality it is important to include non convulsive status epilepticus as part of a differential for altered mental status.

Palliative Care
Joint Plenary Poster Session and Reception
4:00 PM
Thursday, February 18, 2016

215 NEEDS ASSESSMENT FOR PEDIATRIC PALLIATIVE CARE AT A TERTIARY CHILDREN'S HOSPITAL

TG Carroll. *University of Oklahoma Health Science Center, Oklahoma City, OK*

10.1136/jim-2015-000035.215

Purpose of Study Currently, 90% of children with special health care needs are living past their 21st birthday with over 500,000 children and their families coping with the daily care of a life-limiting illness in the US. Approximately 53,000 children die each year in the United States but only 10–20% of these children receive palliative end-of-life services. Most pediatric physicians relate that they feel poorly trained to communicate with patients and families regarding poor prognoses, clarification of care goals, or even the introduction of palliative care (PPC). PPC focuses on identifying and treating the suffering associated with life-limiting and chronic conditions - suffering that occurs

concurrent with disease-directed, curative or life-extending measures.

Methods Used This survey was commissioned to assess the attitudes of attending level pediatricians toward a consultative palliative care team at The Children's Hospital at OU Medical Center (TCH).

Summary of Results The pediatric palliative care team utilization study completed July 30, 2013. After 7 days, 28 surveys were completed from 132 pediatric physician faculty surveyed (21%). The responses were overwhelmingly positive and represented nearly every specialty in the Department of Pediatrics at TCH. Of those surveyed, over 96% responded that they would use the proposed PPC team and a similar number felt they needed help in providing quality PPC. Respondents estimated that in a given month they would consult a PPC team for 110 patients total: 58 inpatients (7.2% of total inpatients seen by these attendings) and 52 outpatients (2.5% of the total outpatients seen by these attendings). The barriers foreseen to implementation of a PPC team included the faculty needing a better understanding of how to integrate the PPC team with the primary team's plans of care and how to better recognize patients that would benefit from a PPC team consult to utilize the team most appropriately.

Conclusions In this survey, attending physicians described a significant number of patients that would benefit from PPC. In addition, current pediatric providers feel ill equipped to provide this care. This study demonstrates a significant need for pediatric palliative care services at TCH and likely most tertiary pediatric care centers.

216 CHANGES IN HOSPICE ENROLLMENT AFTER THE IMPLEMENTATION OF AN ADVANCED ILLNESS TRIGGER TOOL IN INTENSIVE CARE UNITS

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10.1136/jim-2015-000035.216

Purpose of Study In February 2015 NSUH initiated an advanced illness bed initiative as an effort to better align the goals of care in intensive care units (ICU). Advanced Illness occurs when one or more conditions become serious enough that general health and functioning decline, and treatments begin to lose their impact. When patients are triggered as advanced illness, they are then considered for transfer to the Palliative Care Suite (PCS) after a palliative medicine consultation. The PCS functions as an inpatient hospice unit and when appropriate ICU patients can be enrolled directly into hospice. The objective of this study is to measure changes in hospice enrollment to the PCS before and after the start of the Advanced Illness Beds (AIB) Initiative.

Methods Used A retrospective data review was performed on data collected on patients discharged from the PCS from February 1st 2014-June 30th 2015. Patients were divided into two groups, before the AIB Initiative (2/2014–1/2015) and after (2/2015–6/2015). Data included demographics and prior hospital location.

Summary of Results A total of 1,023 patients were admitted to the PCS between Feb. 1, 2014 and June 30, 2015. 705 patients were admitted prior to the AIB initiative and 318 after. In the 12 months before the initiative 175 patients were transferred from ICU's, 10 of which were admitted as in-patient hospice. In the five months since the initiative, 65 patients were transferred to the PCS from ICUs, 12 of which admitted as in-patient hospice.

Conclusions Our results show that in the year prior to the AIB initiative 5.71% of all ICU transfers to the PCS were hospice enrollees and after the initiative, the percentage has increased to 18.46% over only five months. There has been an increase in the average number of ICU to hospice patients from 0.83 per month to 2.4 per month since the initiative, an increase of 190%. Using an advanced illness criteria in the ICU's allows for earlier identification, clarification of goals of care and increased hospice enrollment.

Pediatric Clinical Case
Joint Plenary Poster Session and Reception
4:00 PM
Thursday, February 18, 2016

217 ALKALOSIS AND FLUID STATUS IN INFANTS WITH PYLORIC STENOSIS

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10.1136/jim-2015-000035.217

Purpose of Study The metabolic sequelae of pyloric stenosis (PS) are well described. Contraction alkalosis is the usual presentation. These infants require correction of their alkalosis prior to surgery. Measuring alkalosis can be invasive and time consuming. Non-invasive determination of fluid status would be ideal. The relationship between inferior vena cava (IVC) and aorta (Ao) has been validated as a measure of fluid status. The USCOM uses an algorithm to determine cardiac output (CO). This also has been validated. We hypothesize a strong correlation between bicarb [HCO_3] levels and our hemodynamic measures.

Methods Used This pilot study examines the correlation between alkalosis and fluid status in PS patients. Fluid status was determined via abdominal US by measuring the transverse diameter of the aorta and IVC in the same

Table 1. Descriptive statistics

Measurement	N	Pre	Post	Difference	p-value
		Median (Q1, Q3)	Median (Q1, Q3)	Median (Q1, Q3)	
IVC/Ao Index	11	0.5 (0.4, 0.81)	0.87 (0.72, 0.96)	0.15 (0.02, 0.4)	0.03
USCOM	11	0.91 (0.83, 1.3)	1 (0.86, 1.2)	0 (-0.16, 0.24)	0.99

Fig 1. Correlation of Pre-resuscitation Bicarbonate levels and IVC/Ao Index

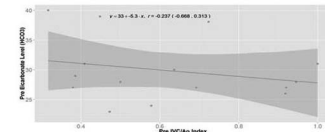
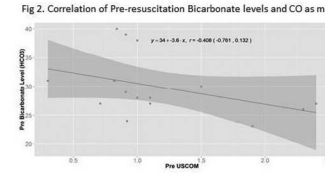


Fig 2. Correlation of Pre-resuscitation Bicarbonate levels and CO as measured by USCOM



Abstract 217 Figure 1

plane, and will be reported as a ratio (IVC:Ao). CO was measured with the USCOM.

Summary of Results The data set is small (N=11). The difference between pre- and post- resuscitation IVC:Ao. was significant (p=0.03). Pre- and post CO from the USCOM were not significant (p=0.99). There was a weak correlation between pre-resuscitation bicarbonate [HCO_3] levels and both the pre-resuscitation IVC:Ao and the pre-resuscitation CO as measured by the USCOM.

Conclusions This technology shows promise for managing fluid status via a non-invasive approach. Statistical significance exists when comparing the IVC:Ao pre- and post-resuscitation. A correlation between normalization of [HCO_3] level and hemodynamics exists as measured with the USCOM and the IVC:Ao, but it is not strong. However, our data set is small. We believe that with a larger data set this correlation will prove stronger.

218 2 MONTH OLD WITH MULTICENTRIC INFANTILE MYOFIBROMATOSIS

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10.1136/jim-2015-000035.218

Case Report Infantile myofibromatosis (IM) is a rare form of fibrous tumor in infancy characterized by the development of nodules involving the skin, bone, muscle and visceral organs. The two forms of IM are solitary and multicentric. Multicentric includes: no visceral or multiple organ involvement. The nodules are firm or fleshy in nature with an array of clinical symptoms related to location. Most cases of the tumor are sporadic but rare familial cases have been reported. Diagnosis is made by clinical suspicion and characteristic histopathological exam. A 3 month old male with past medical history of prematurity and sickle cell disease type _SC was transferred from an outside hospital at 2 months of age for fever. On physical exam he was found to be tachycardic with multifocal lesions on the chest, abdomen, and primarily on the back. Chest x-ray showed a faint right middle lobe opacity, WBC was 27800, platelets 590, normal CSF studies and CRP 7.66. He had an extensive workup. Abdominal ultrasound showed 3 solid lesions (echogenic center) within the liver. Bone survey showed numerous lytic lesions throughout the skeletal system including lytic lesions within the spinous processes of C1, T5, T8, T12, and possibly L2-L3-L4-L5. Abdominal MRI showed multiple solid lesions noted in the retroperitoneum, pelvis, intercostal space, body wall, gluteal regions, and the left upper extremity. The largest nodule measuring approximately 8 mm. Echo showed a large 15×22 mm irregular homogenous mass in the superior-lateral right atrium with no sign of SVC syndrome. Right femur nodule biopsy showed a spindle cell like lesion. Left abdominal wall mass biopsy was read as myofibroblastic proliferation with prominent intravascular growth pattern, features consistent with infantile multicentric visceral myofibromatosis. The gold standard for IM diagnosis is histopathology. Although, spontaneous remissions have been seen, myofibromatosis with visceral involvement carries a poor prognosis with high rates of morbidity and mortality requiring surgery and chemotherapy. Patient was started on a treatment protocol with IV methotrexate and vinblastine. Currently, he continues on chemotherapy and is monitored closely for response and/or complications.

219 THINK OF COMPLICATED SINUSITIS IN A TEENAGER WITH PROLONGED HEADACHE

P Agarwal, M Jung, D Macariola. *East Tennessee State University, Johnson City, TN*

10.1136/jim-2015-000035.219

Case Report We present a case of a thirteen-year-old female who had nasal congestion and headache for a week. She was initially seen at an outlying ER, had pyuria and was treated for urinary tract infection with TMP-SMX and was sent home. Her symptoms worsened over the next week, so she was seen again at the same ER where a CT scan of her sinuses revealed sinusitis. She had no history of previous sinusitis. Her immunizations were up to date. She was hospitalized and treated with clindamycin and prednisone. While admitted the headache worsened, became localized to the frontal area and she developed periorbital swelling. She was referred to our institution for further evaluation and management. She denied vision problems, numbness, tingling or weakness. Physical examination findings included, temperature of 98.2, heart rate 72, respiratory rate 19 and blood pressure 119/64. She had swelling & tenderness on her forehead with bilateral periorbital swelling. Rest of the physical examination was unremarkable. Neuroimaging studies revealed pan sinusitis & extra-axial left frontal epidural abscess. She had an emergent craniotomy for evacuation of the abscess & was also evaluated by ENT specialist. *Streptococcus viridan*s group was isolated from the abscess. Because of suspected polymicrobial infection she was treated with 12-week course of vancomycin, metronidazole and ceftriaxone with complete recovery. Sinusitis can lead to a wide variety of complications, both extracranial and intracranial. Nowadays, sinusitis has surpassed otitis media as the leading cause of brain abscesses in about 13–40% of the cases. There is growing evidence that new onset sinusitis in children can present as an epidural abscess. *S. viridans* is a normal oropharyngeal flora and is commonly associated with infections in the oral cavity and endocarditis. As depicted in our case we would like to emphasize that the first episode of sinusitis can lead to intracranial abscess and clinicians should also be aware that *S. viridans* might be the causative organism. There should be a low threshold for imaging modalities especially in those with orbital complications. A multidisciplinary approach involving ENT, infectious disease and neurosurgery can lead to timely diagnosis and treatment of the patient thereby preventing neurological complications.

220 A CURIOUS CASE OF REVERSIBLE TETANY

J Aita-Levy, P Musacchia. *LSU Health Science Center/Children's Hospital, Kenner, LA*

10.1136/jim-2015-000035.220

Case Report A 17 year old male presents to our facility via EMS with diffuse muscle cramping. EMS relays information obtained by the patient's friends who made the 911 call. No family or friend is present at bedside. Patient had been at a local concert series earlier that evening when he started vomiting. Approximately 2 hours after emesis began, the patient began to develop muscle cramping. Vitals were T 98.2°F, HR 109, RR 22, BP 120/53, and Sats 99%. The patient appears in acute distress with dry mucous membranes. Rapid deep breathing was noted with clear and equal breath sounds bilaterally without retractions. Cardiac exam revealed a tachycardic regular rhythm without murmur. Capillary refill was 4 seconds with 2+ pulses. Neurologically, the patient was unable to form coherent sentences, had hypertonia in bilateral upper and lower extremities, and had wrists and forearms fully flexed with legs in full extension. A CBG was obtained immediately and revealed an acute respiratory alkalosis (7.60/19/62/18.7/-0.5). While further workup was initiated, a normal saline bolus was given and attempts were made to calm the patient. Prior to obtaining results, the tetany self-resolved without further intervention. Repeat CBG showed complete resolution of respiratory alkalosis (7.38/40/68/23.7/-1.3). The patient was diagnosed with hyperventilation syndrome and discharged. Hyperventilation syndrome often presents with dyspnea, paresthesia, anxiety, and chest tightness. Diffuse carpopedal spasm, or tetany, is a rare presentation of hyperventilation syndrome. Tetany may be triggered by alkalosis-induced hypocalcemia or cerebral vasoconstriction associated with hypocapnia. Tetany associated with hyperventilation should quickly respond to normalization of PaCO2. Our patient's clinical presentation of diffuse carpopedal spasm is rare and without obtainable history makes it a complicated case. While hyperventilation syndrome is a diagnosis of exclusion in such circumstances, time and patient reassurance reveals the etiology of his peculiar presentation.

221 USE OF ULTRASOUND IN DIAGNOSIS OF NECROTIZING ENTEROCOLITIS

S Ali,[1,2] P Denning,[1,2] A Kirpalani[1,2]. [1]*Emory University School of Medicine, Atlanta, GA;* [2]*Children's Healthcare of Atlanta, Atlanta, GA*

10.1136/jim-2015-000035.221

Case Report A previously healthy, full-term, 20-day-old male neonate presented to Egleston Children's Hospital for fever and irritability. He was admitted on IV antibiotics after a full septic work up. Initial labs revealed an elevated CRP and WBC count with a neutrophil predominance. After 48 hours of negative cultures, antibiotics were discontinued. He continued to be monitored inpatient due to persistent irritability and mild feeding intolerance with abdominal distension. Due to a history of blood streaked stool, his formula was switched from breast milk/GGS gentle to Alimentum. Shortly afterwards, he had a grossly bloody stool with worsening abdominal distension. Repeat labs were unremarkable, but an abdominal xray revealed an ileus without pneumatosis intestinalis. Thus, the infant was treated for Stage IB medical necrotizing enterocolitis (NEC). After abdominal decompression, a RLQ mass was palpated. Abdominal ultrasound confirmed a complex RLQ mass and showed areas of thickened bowel wall and pneumatosis. A repeat xray again revealed no evidence of pneumatosis. Because an extensive literature review supported initiation of enteral feeds based on xray results, NEC management continued based on xray findings instead of ultrasound findings. Enteral feeds were slowly initiated 10 days from the first negative abdominal xray, which the patient tolerated. He was subsequently discharged home feeding formula by mouth.

Discussion Current practice uses abdominal xrays to assess for resolution of pneumotosis in determining when to initiate enteral feeds after NEC. This case raised the question of whether ultrasounds may be a better tool to follow the findings associated with NEC, especially given the benefit of no radiation exposure. In this case, initiation of enteral feeds was based on abdominal radiograph findings. Our neonate tolerated this management without complications despite having abdominal ultrasounds that continued to show pneumatosis. The use of abdominal ultrasounds in the diagnosis and management of NEC, therefore, may not be a specific measure of severity and would unnecessarily prolong hospitalization. Abdominal xrays, therefore, should continue to be the gold standard for NEC diagnosis, despite the increased use of abdominal ultrasounds in the recent years.

223 CASE REPORT: CEREBELLAR ATAXIA AND ATYPICAL PNEUMONIA

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Introduction Cerebellar ataxia secondary to mycoplasma is a rare presentation of the extra pulmonary manifestations of mycoplasma. The late onset or lack of respiratory illness, should not defer the clinician from including it in their differential diagnosis. We present a case of a child, who presented with early CNS symptoms and late onset respiratory features.

Case Report A previously healthy 7-year-old male presented with a one week of headaches, associated with daily symptoms of fever, neck pain, fatigue, decreased appetite, photophobia, dizziness and blurry vision. He did not have any changes in behavior. It was not until the day of admission that he had developed a dry cough. Physical examination revealed ataxia, dysmetria, a positive Romberg sign as well as bilateral crackles and a, left tympanic membrane bulging with presence of bullae. No papilledema was noted. A CT brain showed normal findings. Initial chest x-ray, revealed multiple calcifications, leading to a, CT scan chest which showed consolidation of the posterior right middle lobe, minor fissure and right pleural effusion and mediastinal lymphadenopathy. These clinical and radiological findings were suggestive of atypical pneumonia. PPD and AFB sputum cultures were both negative. However the mycoplasma titers obtained showed positive IgM titers, confirming the diagnosis of rhomboencephalitis secondary to mycoplasma. Therapy with azithromycin was initiated on day three of hospital stay with symptoms improving progressively starting day three of treatment

Patient was back to his full baseline by day five of treatment.

Discussion Extra pulmonary manifestations of mycoplasma infections are broad, with potential involvement of integumentary system, hematologic and rarely CNS. Neurological involvement secondary to mycoplasma infections occurs in 0.1% of infected patients. The mechanism of CNS involvement is unclear, but immune mediated reactions are being considered. Although rare, this case, illustrates, that mycoplasma should be on the physician's radar as a potential cause for cerebellar ataxia even when respiratory symptoms are not predominant.

224 FLUDROCORTISONE THERAPY IN CEREBRAL SALT WASTING: A CASE REPORT

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Introduction Hyponatremia is the most common electrolyte disturbance in the intensive care unit with syndrome of inappropriate anti-diuretic hormone, SIADH, and cerebral salt wasting, CSW, being the two major causes. This is a diagnostic challenge as some patients meet criteria for both during the same admission. Increased free water retention is the cause of hyponatremia in SIADH. CSW is defined as excessive natriuresis and diuresis in the setting of an intracranial lesion and normal renal function. Hyponatremia and dehydration are the usual presentation.

Case Description 11 month male presented with a one week history of truncal instability. MRI showed 3.8 cm cerebellar mass with obstructive hydrocephalus. The excised tumor was noted to be medulloblastoma. On postoperative day (POD) one, he had a generalized tonic clonic seizure and labs were normal except for serum sodium drop from 134 to 129 mmol/L. He was started on Keppra and supplemental sodium chloride, NaCl. He needed NaCl supplementation of 60 meq/kg/day and had a urine output of 19.4 mls/kg/hr on POD 3. He was started on fludrocortisone at 0.1 mg daily on POD one after diagnosis of CSW. Serum sodium stabilized with decreased NaCl need and urine output over the next 24 hours. He was discharged on fludrocortisone 0.1 mg BID and 20 meq/kg/day of NaCl.

Discussion CSW is a diagnosis of exclusion with no known etiology, diagnostic features of CSW are hypovolemia, hyponatremia, elevated urine osmolality (>100 mOsm/kg) and elevated urine sodium (>40 mmol/L). CSW is a difficult condition to manage with increased sodium intake and fluid replacement, the standard treatment, sometimes needed for a prolonged period. Fludrocortisone is thought to increase sodium reabsorption and water retention in CSW. In our case fludrocortisone therapy stabilized serum sodium and urine output, allowing the patient to be discharged.

225 AN UNUSUAL CASE OF ENDOCARDITIS PRESENTING WITH MYCOTIC BRAIN ANEURYSM AND OSTEOMYELITIS

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Case Report Abiotrophia defectiva is often implicated in culture-negative infective endocarditis (IE), but is rarely described as causing invasive disease. We report a case of IE in a previously healthy host complicated by mycotic brain aneurysm and osteomyelitis. A 14 year-old female presented in status epilepticus following 4 days of fever, headache, and brief episodes of right hand paresthesia. She had no history of dental disease, recent dental work, or trauma. Physical exam was notable for new-onset III/VI harsh blowing systolic murmur over the apex, right upper extremity pronator drift, and neck stiffness. CBC, CMP, and head CT were unremarkable. An echocardiogram revealed a mitral valve vegetation and perforation of the anterior leaflet associated with severe mitral regurgitation. Initial antimicrobial coverage included vancomycin, ceftriaxone, and acyclovir. On hospital day (HD) 2, blood cultures speciated A. defectiva resistant to erythromycin with intermediate resistance to penicillin. Antibiotics were changed to vancomycin and gentamycin, however, on HD 6, blood cultures speciated A. defectiva again. Brain MRI was performed to evaluate neurological symptoms which revealed septic emboli involving both parietal lobes with concern for mycotic aneurysm. She was continued on parenteral antibiotics and monitored with serial echocardiograms. Surgical management was deferred. On HD 15, she developed left ankle pain and cellulitis. MRI and nuclear bone scans were obtained, confirming septic arthritis and osteomyelitis. She underwent surgical debridement, and after 5 days, intraoperative cultures returned positive for rare Escherichia coli and Veillonella parvula. She remained febrile, thus high-dose ceftriaxone was added to her regimen. However, within 72 hours, she seized with associated non-reactive pupils. Before death, emergent head CT demonstrated a ruptured mycotic aneurysm, midline shift, and herniation. Despite early recognition and management

Abstract 224 Table 1 Laboratory Values

	POD 1	POD 2	POD 3	POD 4	POD 5	POD 6
Daily serum sodium (mmol/L)	135→129	133–135	134–137	130–134	137	131
Urine osmolality (mOsm/kg)	673		459			
Urine sodium (mmol/L)	268		217			
Urine output (mL/kg/hr)	1.9	10.6	19.4	4.1	4.7	3.8
Sodium intake (meq/kg/day)	11.1	43.7	60	22.7	20	20
Fluid balance (mL)	836	286	351	25	90	38
BNP (pg/mL)		271.6			16.1	

with appropriate antibiotics, this case highlights poor outcomes associated with A. defectiva IE in a previously healthy host compared to other causes of IE.

226 ANTIHISTAMINES: SAFE OR UNSAFE DURING PREGNANCY? - A CASE REPORT

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Case Report We report a case of an infant who developed signs and symptoms consistent with neonatal withdrawl syndrome suspected to be secondary to maternal hydroxyzine treatment during pregnancy for bipolar disorder. Male born at 37-wk gestation to a 30 year-old, G3P2 obese female, via c-section, weighing 3155 g, APGAR's of 8 and 9. Transferred to NICU 5 hrs after delivery due to dusky spell, intermittent posturing, apnea and poor suck. Maternal history of diabetes, pre-eclampsia, renal disease and bipolar disorder. Maternal medications: hydroxyzine 150 mg/day and Metformin. Mom smoked, used THC, no alcohol. Prenatal labs negative. UDS and cord stat were positive for THC. On DOL 1 infant was noted to have undisturbed tremors and increased tone, Finnegan scores ranged from 3–10. On DOL 2 infant had episodes of eye flickering, tonic-clonic movements of upper extremities, and lip smacking lasting <5 min each. Labs showed a glucose of 100, calcium 9.2, ammonia 83, lactate 0.7 and negative blood culture; excluding hypoglycemia, hypocalcaemia, metabolic disturbances or infection as a possible explanation. EEG on DOL 2 showed background activity mildly discontinuous for age, implying mild generalized cerebral dysfunction, without seizures. Symptoms persisted and resolved by DOL 5. Infant continued to have feeding difficulties. Repeat EEG done on DOL 12 showed normal background activity, but occasional sharp waves were seen in both hemispheres, occurring more frequently on the right. Pattern not consistent with a seizure. Head US and Brain MRI showed no abnormalities. Patient remained stable and discharged home on DOL 14. Because of the self-limited nature of the symptoms and negative workup, we suspect neonatal withdrawal from hydroxyzine as the etiology for this presentation. **Discussion:** Hydroxyzine has anticholinergic and antihistaminic properties. It is widely used as an anti-anxiety, sedative and hypnotic agent. It suppress hypothalamic nuclei and extends its effects peripherally in the sympathetic portion of the autonomic nervous system. It is important to acknowledge the potential neonatal impact of such frequently prescribed medication during pregnancy. Although this outcome is rare, our observation suggests possible withdrawal syndrome due to long-term treatment with hydroxyzine in absence of other etiologies.

227 DOUBLE AORTIC ARCH IN A NEWBORN PRESENTING WITH AN APPARENT LIFE-THREATENING EVENT (ALTE) - A CASE REPORT

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Case Report We report a case of a 21-day-old male who was admitted because an ALTE. Mother reported a choking episode, which occurred while feeding. Infant was born at 39 weeks, weighing 3438 g to a 20-year-old G3P3 Caucasian female. He had breathing difficulty after birth attributed to meconium staining and laryngomalacia. Upon admission he was noted to have biphasic stridor and a 2/6 systolic ejection murmur at left upper sternal edge. Tests included an upper gastrointestinal series which showed a posterior indentation on the esophagus in the upper thoracic area. Echocardiogram showed a double aortic arch with mirror-image branching and a small secundum ASD. CT angiography confirmed presence of a double aortic arch, which encircled completely the esophagus and trachea; the right arch was minimally dominant with a left-sided descending thoracic aorta. Patient was transferred to higher level of care facility for cardiac surgery. The operation consisted of transection of the smaller left-sided arch and division of the ligamentum arteriosus via a left lateral thoracotomy. Bronchoscopy showed tracheomalacia but no tracheal rings. At 79 days of age he was readmitted due to acute respiratory failure secondary to a viral infection. After 5 days of intubation, he was weaned off oxygen and was discharged home in good condition. **Discussion:** Vascular rings comprise of about 1% of all congenital cardiovascular defects. They may cause compression of the upper airway resulting in biphasic stridor. Our patient presented with an ALTE during feeding, a less common presentation of a vascular ring. Symptoms usually result from compression of the esophagus posteriorly and may include slow feeding, fatigue, frequent regurgitation, and aspiration pneumonia. Severity of symptoms varies with degree of compression. Other causes of biphasic stridor including congenital subglottic stenosis, subglottic hemangiomas, webs in the upper trachea, and vocal cord paralysis were ruled-out in this case.

228 A SNEAKY SNAKE BITE WITH SEVERE SEQUELAE IN A TWO YEAR OLD PATIENT

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Case Report We report the case of a two-year-old previously healthy male with snake bite induced severe consumptive coagulopathy. On the afternoon of presentation the patient fell while playing outside on the family farm. Thirty minutes after the injury the patient appeared confused and started drooling. Upon presentation to an outside hospital the patient was initially treated for a suspected seizure; however, he quickly became hypotensive and developed a severe consumptive coagulopathy with hematocrit of 21, platelets of 6000, INR>9.4, and fibrinogen <60. Upon arrival to the Children's of Alabama Intensive Care Unit the patient's entire right leg and groin were markedly ecchymotic and swollen. His right leg was pulseless both to palpation and by Doppler. This presentation was consistent with pit viper envenomation. Due to elevated compartment pressures of the right thigh and leg an emergent fasciotomy was performed by orthopedics

with return of pulses. He acutely required a total of sixteen vials of Crofab before lab values and vital signs improved. He had a full recovery and was discharged home thirteen days after admission. The Crotalinae family of snakes (rattlesnakes, cottonmouths, and copperheads) account for the majority of envenomations in the U.S. The severity of envenomation is determined by assessing for local symptoms, evidence of coagulopathy, and systemic effects. The Lavonas algorithm provides guidelines for administration of anti-venom. In our patient's case, the outside hospital was in communication with our ICU during their initial assessment. Based on the history we asked if a snake envenomation was a possibility. Their team felt that it was unlikely given that the farm was recently mowed. This premature closure delayed the patient's treatment with anti-venom. This case highlights the importance of a high index of suspicion for snake envenomation in children presenting with unilateral limb swelling, coagulopathy and shock in endemic snake areas. Rapid administration of anti-venom is essential for preventing morbidity and mortality from envenomation. Venom-induced compartment syndrome is rare; however, it can be seen in small children and requires emergent anti-venom therapy and rarely fasciotomy in severe untreated cases.

229 CONGENITAL TTP IN IDENTICAL TWINS: A CASE REPORT

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Background Congenital thrombotic thrombocytopenic purpura (TTP) is a rare disorder caused by mutations in ADAMTS13 gene leading to severe deficiency of the von Willebrand factor (VWF)-cleaving protease and accumulation of ultra-large VWF multimers, which manifests as varying clinical presentations of microangiopathic hemolytic anemia, thrombocytopenia, and multiorgan microvascular ischemia.

Case Identical 5 year-old Bangladeshi twins presented for evaluation of recurrent episodes of thrombocytopenia and hemolytic anemia, after being previously diagnosed with both chronic immune thrombocytopenic purpura and autoimmune hemolytic anemia. Twin 1 presented with fever, cough, abdominal pain, emesis and petechiae noted to neck and abdomen. On admission, his labs were notable for hemoglobin of 10.7 g/dl, platelet count of 5×109/l, and creatinine of 1.7 mg/dl. Twin 2 presented several days later with a similar presentation of fever, abdominal pain, emesis, and petechiae over his torso. His labs were significant for a platelet count of 57×109/l. Twin 1 was diagnosed with an acute bilateral otitis media and Twin 2 was diagnosed with a viral illness. Both were treated supportively with FFP and platelet transfusions. Twin 1 was found to have ADAMTS13 activity of <5% (normal range >66%) and Twin 2 had ADAMTS13 activity of<4%; both were negative for ADAMTS inhibitor. They were subsequently treated with monthly prophylactic infusions of intermediate purity plasma derived factor VIII concentrate infusions.

Discussion The traditional mainstay of congenital TTP treatment has been fresh frozen plasma (FFP) transfusions, with frequency dependent on clinical severity. FFP transfusions carry inherent risks, such as immunologic, infectious, or physical transfusion reactions. Recent data shows promising results with alternative treatment approaches, including plasma-derived factor VIII concentrate infusions, although further study is needed.

230 SYMPTOMATIC INFANTILE HEPATIC HEMANGIOENDOTHELIOMA PRESENTING AS PULMONARY HYPERTENSION IN A FULL TERM NEWBORN INFANT

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Case Report Four day old, full term, African American male infant, born to a 35 years old G_3P_4 mother with uneventful pregnancy, was transferred to neonatal intensive care unit with irritability, poor feeding and tachypnea. He was born by uncomplicated delivery, with unremarkable physical findings and vital signs during first postnatal day. On second postnatal day, he developed loud, holosystolic murmur at left lower sternal border, evaluation of which by an echocardiogram revealed structurally normal heart with tricuspid regurgitation (Vmax of 4.4 m/s) and dilated right atrium and right ventricle, indicative of persistent pulmonary hypertension. Over next 48 hours, his clinical course progressed to develop tachycardia and respiratory distress requiring admission to neonatal intensive care unit. At the time of admission, his examination revealed irritable infant with moderate respiratory distress and tachycardia with normal pre and post-ductal saturations on room air. Cardiovascular examination revealed a hyperdynamic precordium, loud second heart sound, holosystolic murmur of grade 3/6 severity, best heard at left lower parasternal border. Breath sounds were equal bilaterally with no crackles audible. Abdominal examination revealed hepatomegaly with systolic bruit over the liver. No vascular malformations noted over the skin. Chest X-ray revealed cardiomegaly with interstitial streaky opacities suggestive of interstitial pulmonary edema. A provisional diagnosis of high output congestive heart failure (CHF) with hyperkinetic pulmonary hypertension was made. Ultrasonography of liver, which was performed to look for arteriovenous malformations, as a part of work up for high output CHF, revealed hyperechoic masses with internal and peripheral color flow suggestive of vascular lesions. Contrast enhanced magnetic resonance imaging of liver confirmed the presence of a large infantile hepatic hemangioendothelioma. Further work for Kasabach-Merritt syndrome was negative. The vascular lesion was managed with oral Prednisolone and Propranolol. CHF and hyperkinetic pulmonary hypertension were managed with fluid restriction and diuretic therapy.

231 ALTERED MENTAL STATUS AND ATAXIA IN A TODDLER

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10.1136/jim-2015-000035.230

Case Report A 3-year-old female was transferred to our institution with acute ataxia and change in mental status. She had been visiting her grandmother and noted to be acting strangely, fell down, and was difficult to arouse. Guardians deny any known ingestion, however several 150 mg pregabalin tablets were found near the patient. Other medications in the home included oxycodone, amlodipine, and duloxetine. Initial differential included ingestions, infection, malignancy and trauma. Laboratory testing including a urine drug screen and complete metabolic panel returned normal. Acetaminophen and salicylate levels were normal. CT head was without abnormalities. A urine specimen was analyzed with gas-chromatography-mass-spectrometry which detected caffeine and theobromine without pregabalin. EKG was obtained and showed QTc 378. Patient was initially managed in the PICU due to lethargy with supportive care, including IV fluids and continuous monitoring. She remained hemodynamically stable and was transferred to the floor. She remained ataxic for ~28 hours following ingestion. On resolution of neurologic symptoms she was discharged home. Pregabalin has been available in the US since 2005 for treatment of epilepsy, neuropathic pain and fibromyalgia in adults. Due to increasing use, ingestions of pregabalin may only become more frequent, and few reports have been published regarding its effects in children. There is no known antidote for its toxicity, it is renally cleared, and its half-life is about 6 hours. Limited retrospective studies have shown symptoms of drowsiness and dizziness, and most were managed with supportive care in the ED. Case reports in adults with toxicity required increased care including intubation, mechanical ventilation and even hemodialysis in patients with renal dysfunction. Also, providers must be aware that pregabalin is difficult to detect as it is not found on routine GC-MS. Newer methods of detection, such as liquid-chromatography-mass spectrometry (LC-MS), are able to detect pregabalin, however many institutions do not have LC-MS capabilities. Our case highlights the need to consider pregabalin ingestions in pediatric patients presenting with acute neurologic changes, and future research should seek to increase the knowledge of adverse effects, detection methods, and management in the pediatric population.

232 THE CONUNDRUM OF HEMICHOREA

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Introduction Chorea is a hyperkinetic movement disorder, the acute onset of which includes a broad differential of infectious, vascular, autoimmune, demyelinating, and metabolic etiologies. It warrants investigation with both extensive history and detailed physical exam as well as labratory data and neuroimaging.

Case A 35 month old previously healthy white male presented with acute onset of right sided lower facial weakness and involuntary movements involving right upper and lower extremities. He had an upper respiratory infection without any fever in the preceding 2–3 days and had a fall where he hit his head in the bathtub the day prior without alteration in mental status. Physical examination was pertinent for mild right sided facial droop, hemichorea of the right upper and lower extremity with unsteady gait. Laboratory evaluation included a urine drug screen, CBC, ESR, CRP, electrolytes, liver enzymes, TSH, free T4, ANA panel, ASO titer, anti-DNase B antibody, pyruvate, lactate, and CSF studies which were all within normal limits. An MRI of the brain revealed increased signal in the left caudate and putamen on T2 and FLAIR sequences with corresponding areas of restricted diffusion and minimal mass effect without any abnormal enhancement. MRA and MRS were essentially unremarkable. An echocardiogram was normal. On hypercoagulable workup he was found to be heterozygous for the G20210A mutation in the Prothrombin gene. Facial weakness resolved within a day and hemichorea completely improved in a week with conservative management. He was sent to genetics for counseling of his prothrombin gene mutation.

Discussion Examining a broad differential in the setting of acute onset of hemichorea is crucial. In this case MRI suggested infarction, however it was not a typical location for arterial or venous infarct. Further work up did not suggest other etiologies with the exception of a hypercoagulable panel which showed heterozygousity for the G20210A Prothrombin gene mutation which incurs a two to four fold increased risk in venous thrombosis. His hemichorea improved with conservative management suggesting pharmacological treatment may not be required to achieve full resolution of symptoms.

233 MANAGEMENT OF TWIN-TWIN TRANSFUSION SYNDROME LEADING TO INTRAUTERINE FETAL DEMISE AND ISCHEMIC LIMB LOSS AND PVL IN THE SURVIVING TWIN

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Case Report Twin-twin transfusion syndrome (TTTS), defined by the presence of oligohydramnios in one twin and polyhydramnios in the other, occurs in 10–15% of monochorionic (MC) pregnancies as a result of unequal blood flow due to placental vascular connections. Complications can include unequal growth, anemia, cardiac and neurological abnormalities, hydrops fetalis, intrauterine death, and rarely (0.51%) ischemic limb loss. Limb ischemia can also be caused by amniotic band syndrome and emboli. Management options of TTTS include expectant management, amnio-reduction and laser ablation of the vascular connections. Laser ablation is associated with 2× increase survival rate and 80% reduction in neurologic morbidity. Unmanaged TTTS can be fatal for both twins. At 14 weeks gestation (WGA) a 20-year-old G4P2 woman was diagnosed with a MC, diamniotic twin gestation. Evolving TTTS resulted in laser ablation at 25 WGA. Three days later Twin A suffered fetal demise. Ultrasounds of Twin B were normal until 28 WGA when the left distal femur was seen protruding through the soft tissues. Twin B was delivered vaginally at 30 5/7 WGA weighing 1.57 kg, the skin of the left lower limb was noted to be pale and

necrotic; Pediatric orthopedics performed an above the knee amputation without complication. 12 days after delivery cranial US suggested periventricular leukomalacia. PVL with extensive bi-hemispheric involvement was later confirmed by MRI. Limb ischemia is only previously reported in 28 MC pregnancies, most of which involved the right lower limb. In the majority of these cases laser ablation was not performed, if it was performed, the severity of the affected limbs/digits was decreased. Theories for limb ischemia in TTTS include polycythemia, increased angiotensin, thromboplasts, umbilical artery steal syndrome, and laser induced thrombi. In this unique case, Twin B, the recipient twin had an affected left lower limb. This case demonstrates the inherent risks of MC pregnancies and TTTS despite modern treatments. Laser ablation, while potentially curative, still leads to complications and, in this case, likely led to the fetal demise of Twin A and PVL and limb necrosis in Twin B. More studies are needed to improve fetal outcomes in MC twin pregnancies.

234 NTPROBNP AS A SURROGATE BIOMARKER TO DIAGNOSE PULMONARY ARTERIAL HYPERTENSION IN VERY LOW BIRTH WEIGHT INFANTS

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Purpose of Study The pulmonary arterial hypertension (PAH) associated with bronchopulmonary dysplasia (BPD) is a major cause of morbidity and mortality in very low birth weight (VLBW) infants. Echocardiogram (ECHO) may not be readily available, is dependent on the presence of tricuspid insufficiency jet and is also operator dependent. The aim of this ongoing study is to evaluate the value of the N terminal Brain Natriuretic Peptide (NTproBNP) as a possible reliable surrogate biomarker to diagnose PAH in VLBW infants with BPD.

Abstract 234 Table 1 Mean NTproBNP level (SEM) at 28, 32 and 36 weeks GA in the BPD and control group

Gestational Age (weeks)	Mean NTproBNP BPD group (pg/ml)	Mean NTproBNP control group (pg/ml)	p value
28	4034±1131	755±162	0.04
32	4434±1345	751±179	0.05
36	4814±1368	763±229	0.05

Abstract 234 Table 2

Gestational Age (weeks)	Mean NTproBNP PAH by ECHO (pg/ml)	Mean NTproBNP No PAH by ECHO (pg/ml)	p value
28	6210±2251	1603±482	0.006
32	7079±2768	1631±495	0.006
36	8190±2975	1953±633	0.004

Methods Used After IRB approval and obtaining maternal consents, VLBW infants (birth weight $\leq$1500 gm &<30 weeks gestational age [GA]) were included. Babies with known chromosomal anomalies or congenital defects affecting cardiorespiratory system were excluded. PAH was defined as ECHO findings of tricuspid regurgitant jet velocity≥2.8 m/sec, presence of right ventricular hypertrophy and/or flattened ventricular septum. BPD group included infants requiring O_2 at 28 days of age and control group included infants not requiring O_2 at same age. Thirty infants met our inclusion criteria (19 in BPD group, 11 in control group). NTproBNP levels were obtained and ECHO was performed on all subjects at 28, 32 & 36 weeks GA. Pearson correlation was used to analyze our results.

Summary of Results See Tables 1 & 2

Conclusions The NTproBNP seems to be a reliable biochemical marker for PAH secondary to BPD as early as 28 weeks GA in VLBW infants. As there are no published normal values for NTproBNP in VLBW infants, we used the control group values as reference points. The NTproBNP may prove to be a valuable tool for the early diagnosis and management of PAH if our results are validated by further research.

235 A RARE PRESENTATION OF SEPTO-OPTIC DYSPLASIA

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10.1136/jim-2015-000035.234

Case Report Starting in the third gestational week, human brain development begins and is the product of a complex series of dynamic processes that are genetically organized. Septo-optic dysplasia is a rare disorder of early forebrain development characterized by hypoplasia of the optic nerve, abnormal formation of structures along the midline of the brain and pituitary hypoplasia. A 4111 gram girl infant born at 38 weeks via spontaneous vaginal delivery to a 21 year old G2P1011 was admitted to an outside facility NICU for respiratory distress. APGARs were 2, 3 and 5. The patient had a complicated NICU stay. She was evaluated by pediatric ophthalmology and was found to have severely hypoplastic optic nerves. Thyroid studies and cortisol levels were drawn which showed normal thyroid functions, yet her cortisol levels were low. An MRI done prior to discharge from the NICU to look for ischemic changes showed dilation of bilateral lateral ventricles with agenesis of the corpus callosum. Subsequently, a VP shut was placed. At 6 months of age the infant was noted to be failure to thrive therefore testing was done to look for an organic cause. She was found to be hypothyroid and hyponatremic, consequently she was started on thyroid replacement and HCTZ. The child is currently followed closely by pediatric endocrinology, pediatric neurosurgery and pediatric neurology. Septo-optic dysplasia has a reported incidence of 1 in 10,000 births with males and females equally affected. Only 30% of patients diagnosed have complete manifestation having all three characteristics. There is a large phenotypic spectrum of disorder. The cause is unknown in most cases. The inheritance seems to be sporadic although some family cases have been identified showing autosomal recessive inheritance. Young maternal age has been found to be a risk factor. Treatment at this time is aimed at treating the individual symptoms.

236 ANTI-N-METHYL-D-ASPARTATE RECEPTOR ENCEPHALITIS: A PROGRESSIVE BUT TREATABLE NEUROPSYCHIATRIC SYNDROME

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Case Report A 17-year-old female was transferred to our institution for fever, headache and altered mental status. VS were T 38.2, P 143, BP 143/90; neuro exam revealed a disoriented, agitated patient who did not follow commands with hyperreflexia and choreoathetoid movements of arms. LP revealed a WBC of 183 (89%L, 8% monocytes) with normal glucose, protein and negative gram stain. She was treated with Vancomycin, Cefotaxime, Acyclovir and Versed drip for agitation. Pertinent tests including blood/CSF cultures, CBC, metabolic panel, blood/CSF HSV PCR, CSF state viral panel, EBV IgM, viral respiratory, CSF for enterovirus PCR, CSF fungal cultures, West Nile titer, HIV, RPR, Bartonella Henslae, CMV, ASO, Anti-Dnase B titers, ANA, drug screen and PPD were all negative. Serum IgM to Mycoplasma was positive but CSF PCR was negative; (Azithromycin was added). MRI was normal. Multiple EEGs showed slowing/disorganization without epileptiform discharges. Amino/organic acids and ammonia were normal. During hospitalization, her condition deteriorated with continuous choreoathetoid movement of upper extremities, eye blinking, facial dyskinesia, seizures and respiratory depression requiring intubation/ventilation. She received multiple anticonvulsants and was then started on IV immunoglobulin (IVIG) and high dose steroids for suspected autoimmune encephalitis. This was confirmed with positive test for serum/CSF antibodies against N-methyl-D-aspartate (NMDA) receptors. She was transferred to a tertiary care center where ovarian teratoma was diagnosed and removed. She also received plasmapheresis, cellcept, cytoxan, rituximab, and multiple infusions of IVIG. After a five month hospital stay, she was released in improved condition being able to walk and speak but has had recurrent violent agitation requiring 5 psychiatric admissions. Anti-NMDA receptor encephalitis is an autoimmune disease that presents with complex neurologic and psychiatric symptoms. IgG against NMDA receptors results in receptor loss on neurons. In 58% of cases, there is an associated ovarian teratoma. Serious neurologic problems persist in 16%. Anti-NMDA receptor encephalitis should be considered in patients presenting with neuropsychiatric symptoms not explained by other causes.

237 DRESS SYNDROME SECONDARY TO SULFASALAZINE IN A PATIENT WITH INFLAMMATORY BOWEL DISEASE

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Case Report Drug reaction with eosinophilia and systemic symptoms (DRESS) is a rare but severe drug hypersensitivity reaction which presents with skin eruption, fever, rash, lymphadenopathy, eosinophilia and organ system involvement. The pathogenesis is not clear, but is understood to be a drug-specific immune response. The clinical symptoms of DRESS resolve gradually following the removal of the offending drug with symptomatic support. We present a 16-year-old male with a history of Ulcerative Colitis (UC) with DRESS syndrome likely secondary to Sulfasalazine, medicine necessary for the treatment of his UC. The patient had previously tolerated mesalamine therapy for several months, an insurance-based medication change required the use of sulfasalazine. Three weeks into treatment, the patient developed fever, eosinophilia, elevated transaminases, and hyponatremia, necessitating transfer to the intensive care unit. Additionally, he had a previous hospitalization 8 days prior for a viral syndrome and rash, where he was placed on amoxicillin for presumed strep infection. At that time, he did not display eosinophilia or systemic symptoms. Previously published literature has highlighted likely penicillin-induced as well as viral-induced flares of DRESS syndrome, and it is possible in this case that a predisposition to a DRESS reaction was triggered by his treatment with amoxicillin. Subsequently, he was also attempted on azathioprine treatment, but this was withdrawn due to an early-onset erythematous rash, not associated with eosinophilia. This patient presents particular difficulties in determining therapy that is both covered by his insurance and does not cause adverse reactions. Unfortunately, patients who experience DRESS are not candidates for desensitization therapy since this is an immunologic phenomenon and not an allergic reaction. He must strictly avoid this drug and all sulfa drugs; future reaction is unpredictable and could be life threatening. To maintain good control of his UC, we recommended a return to mesalamine or TNF- blockade, both of which will need to further be explored by his gastroenterologists.

238 NEONATAL LUPUS ERYTHEMATOSUS RASH: A HARBINGER OF A BIGGER PROBLEM

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10.1136/jim-2015-000035.237

Case Report A 4-week-old female presented to the emergency room for a 9-day history of rash. The rash began as a pimple-like lesion on the patient's forehead. The initial lesion evolved into flat, red splotches spreading across her body, including genitals, which eventually crusted over. The patient had a benign birth and family history except for recollection of the patient's older sister developing a similar rash around 3–4 weeks of age, which was diagnosed as eczema. On physical examination, patient had multiple 3×4 cm annular, erythematous lesions with mild crusting diffusely spread across her body with sparing of palms, soles and mucus membranes. CBC was unremarkable. Hospital Course: The patient was admitted based on clinical presentation. During hospitalization, the mother revealed the patient developed a 3rd degree heart block at 1 week of life requiring pacemaker placement. Therefore, neonatal lupus erythematosus (NLE) was suspected and anti-SSA and anti-SSB titers were taken in the mother and found to be elevated. The NLE rash can be easily mistaken for other rashes commonly seen in the neonatal period.

The photosensitive rash of NLE occurs in an estimated 15–25% of patients with NLE.[1] The rash has a propensity for the periorbital region, sometimes described as "owl-eyes."[2] The rash is self-limited and will resolve naturally by 6–9 months of life when maternal antibodies wane. Correct identification of the NLE rash becomes important, as it may be the first presenting symptom of NLE, which can evolve to have devastating cardiac symptoms. Cardiac manifestations of NLE are strongly correlated with anti-SSA/Ro and anti-SSB/La antibodies. Estimates vary regarding the percentage of NLE neonates affected by cardiac symptoms but it has been well documented that the percentage of those affected increases substantially (~17%) with subsequent pregnancies.[3] Cardiac manifestations develop in utero and includes less severe conduction defects to life threatening complete congenital heart block.[4] Mortality of patients with cardiac NLE is estimated to be about 30% and about 60% of such patients will require lifetime pacemakers.[5] Contributing to mortality is the phenomenon of evolution of incomplete heart block into complete heart block even after maternal antibodies have waned from neonatal circulation.

239 WERNICKE ENCEPHALOPATHY IN A 14 YEAR OLD FEMALE WITH PANCREATITIS

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Case Report Wernicke encephalopathy (WE) is a rare neurologic complication due to thiamine deficiency in the setting of pancreatitis. The incidence of WE in adult patients with severe acute pancreatitis is 0.7 % and our literature search revealed only three reported pediatric cases of WE from pancreatitis. Herein, we describe a previously healthy adolescent female who developed WE as a complication of pancreatitis. A 14 year old female presented with abdominal pain and weight loss. Family also reported increasing sleepiness and weakness. Exam showed epigastric tenderness, flat affect and slow response to questions. Initial workup revealed elevated pancreatic enzymes and imaging consistent with pancreatitis. She was admitted for intravenous fluids, bowel rest and pain control.During the first week of hospitalization, her mental status progressively declined to an obtunded state. Further workup included normal cerebrospinal fluid (CSF) analysis, negative CSF and serum NMDA receptor antibodies, normal ceruloplasmin, negative thyroglobulin antibodies and negative infectious workup (including HIV, West Nile, HSV, syphilis, and tuberculosis). MRI showed symmetric restricted diffusion and T2 hyperintensity with associated swelling in the medial thalami bilaterally. Thiamine level was low at 37 nmol/L (70–180). EEG showed diffuse cerebral dysfunction. The patient was diagnosed with Wernicke encephalopathy and started on IV thiamine therapy with improvement within 24 hours. Repeat MRI showed resolution of restricted diffusion seen in the thalami and improved T2 hyperintensity. WE is most common in chronic alcohol abuse and classically presents with ataxia, ocular abnormalities and altered consciousness. Other conditions leading to nutritional deficiencies can cause WE, including pancreatitis, prolonged fasting, prolonged intravenous feeding, hyperemesis, and malabsorption. The majority of cases of WE do not exhibit the above triad and have a variable and often subtle presentation resulting in delayed diagnosis. WE should be considered in all patients at risk for thiamine deficiency with neurological symptoms. Pediatricians must have a high index of suspicion in order to diagnose and promptly reverse this potentially fatal condition.

240 A COMMON COMPLAINT WITH AN UNCOMMON ANSWER: ABDOMINAL PAIN IN A CHILD WITH LIPOBLASTOMA

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10.1136/jim-2015-000035.239

Case Report Lipoblastoma is a rare, benign tumor found almost exclusively in children which arises from embryonal white adipose tissue. It is often localized and encapsulated, but there is also an infiltrative form in lipoblastomatosis. These tumors most often present on the extremities or trunk but can also present in other locations with retroperitoneal tumors comprising <5% of them. Lipoblastomas are seldom seen with any other malformations or medical conditions and are not associated with any known syndromes. We report a patient with chronic constipation and recurring abdominal distention diagnosed with a retroperitoneal lipoblastoma who comorbidly had a sacrococcygeal teratoma and Duane Retraction Syndrome. A 3-year-old male presented with non-bilious, non-bloody emesis; increased abdominal distention; and intermittent abdominal pain described as coming in waves. His past medical history included premature birth at 32 WGA; Duane Retraction Syndrome; chronic constipation; and intermittent, recurring abdominal distention for the past year. Two months prior, a Type IV benign, mature sacrococcygeal teratoma was discovered and resected. On exam, he was afebrile and not ill-appearing. He had a distended, tympanic abdomen with guarding and tenderness in his upper quadrants. No masses were palpated. A two-view abdominal film was consistent with ileus and showed no signs of obstruction. Labs were within normal limits. Abdominal ultrasound was unremarkable. An abdominal CT showed a 10.1×14.3×15 cm fatty tumor. Surgery resected the tumor en bloc, noting it originated from the descending colon. The pathology report showed a 910 g lobulated, yellow-tan mass encapsulated by a fibrous capsule with no infiltration into colonic tissue. Histologic examination was consistent with a mature lipoblastoma. Cytogenetic analysis of the tumor showed a normal male karyotype of 46XY. A follow-up abdominal CT performed eleven months after discharge showed no evidence of recurrence. Retroperitoneal lipoblastomas are rare; however, tumors should always be included in the differential for a patient with chronic GI complaints, especially with any acute change. To the author's knowledge, this is the only documented case describing a patient with both a lipoblastoma and Duane Retraction Syndrome or a sacrococcygeal teratoma.

241 A RARE TUMOR IN AN UNSUSPECTING PATIENT

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10.1136/jim-2015-000035.240

Case Report An 11 year old hispanic male with no past medical history presents with progressive nausea, vomiting and headache for one week. Associated symptoms include fatigue, generalized weakness, sore throat and subjective fever. Prior to presentation his primary care provider prescribed an oral antibiotic and ibuprofen. The patients symptoms persisted along with one episode of syncope, therefore he was brought to the emergency room. Communication with our patient and his family was difficult given Spanish was their primary language. On physical exam patient appeared sleepy but was arousable, and his neurological exam was normal. MRI showed a mass extending from the pons inferiorly to the level of C2/C3. ENT and Neurosurgery were consulted and a biopsy was performed through the oropharynx. The diagnosis of chordoma with compression of brainstem and spinal cord was confirmed. The patient underwent a 2 step surgical approach including initial cervical spinal fusion followed by transoral resection without complications. The next step in treatment is radiation with possible chemotherapy. Chordoma is a rare, slow-growing tumor that arises from remnants of the embryonic notochord. Notochord cells can persist after birth inside the spine and skull, and rarely can undergo a malignant transformation that leads to the formation of a chordoma. The most common signs and symptoms include pain, vision changes and headache. Annual incidence of chordoma is about 1 in 1 million with children compromising <5%. The average age of diagnosis is around 49 for skull based chordomas and are extremely rare in children. Pediatric protocols on treatment are not clear. Currently, standard of care is complete surgical resection, however, this is not always possible because of the tumor extension and proximity to critical structures. Radiation therapy is frequently used in conjunction with surgical therapy and has been shown to prolong survival. It is critical for general pediatricians to be aware and informed about these rare diagnoses in order to better educate parents and patients. Cultural competency is an obstacle that many providers struggle with today. In order to provide the best care possible, it is imperative that healthcare providers be aware of cultural differences and make every effort to effectively communicate with each patient.

242 STARRY SKIES: COMPLICATIONS OF ROCKY MOUNTAIN SPOTTED FEVER

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10.1136/jim-2015-000035.241

Case Report Rocky Mountain Spotted Fever (RMSF) is a tick-borne illness caused by Rickettsia rickettsii. Symptoms include fever, headache, malaise, arthralgias, abdominal pain, nausea, and rash. Complications include encephalitis, respiratory distress syndrome, pulmonary edema, cardiac arrhythmias, coagulopathy, gastrointestinal bleeding, skin necrosis, and acute tubular necrosis. Our patient presented in late stage disease and ultimately developed respiratory failure and encephalopathy. This case highlights the diagnostic dilemma in these patients and the importance of early recognition and treatment of RMSF. A 7 year old female, previously healthy, presented to the hospital with 1 week of fever, sore throat, cervical lymphadenopathy, conjunctivitis, and diffuse macular rash which evolved into petechiae. Exam was notable for irritability, conjunctival injection, strawberry tongue, cervical lymphadenopathy, abdominal tenderness, mild hepatomegaly, petechiae over her trunk and extremities, sparing palms and soles, and periungal desquamation of toes. Labs were notable for thrombocytopenia, transaminitis, and elevated CRP and procalcitonin. She was initially given IVIG for Kawasaki disease. CSF had increased WBCs (25) and mildly elevated protein. She was empirically treated with ceftriaxone and vancomycin for bacterial meningitis and sepsis, acyclovir for HSV, and doxycycline for tick-borne illness. Rickettsial titers were elevated. The patient developed worsening confusion, headache, and declining respiratory status. CXR showed diffuse interstitial lung disease. She ultimately required several days of ventilator support and pressors for hypotension. A brain MRI showed a "starry sky" appearance, multiple punctate foci of restricted diffusion within the subcortical and periventricular white matter of the frontal and parietal lobes, which has been reported in other patients with RMSF. Rickettsial titers continued to increase, confirming the diagnosis of RMSF. Rickettsia rickettsii causes vasculitis by invading vascular endothelial cells, resulting in complications in multiple organ systems. Our patient was diagnosed late in the course of her illness, resulting in severe complications. This case illustrates the importance of early recognition and treatment of RMSF to minimize morbidity and mortality from this illness.

243 NON-CLASSICAL PRESENTATION OF HENOCH SCHONLEIN PURPURA

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Introduction Henoch Schonlein purpura (HSP) is the most common form of systemic vasculitis in children. Most cases are self-limited and managed conservatively with anti-inflammatory medication. Diagnosis is often made clinically, and follows the common clinical tetrad of palpable purpura, arthritis/arthralgias, abdominal pain and renal disease. Although a multitude of infections and chemical triggers have been identified, the etiology of HSP remains unknown. Here, we discuss a patient who developed HSP whose only presenting symptoms were unilateral joint pain and fever.

Case The patient was a 10-year-old female with a recent history of multiple *Streptococcus* pharyngitis infections, treated with oral antibiotics. She presented to the emergency room with left knee pain and fever. She did not have any symptoms of abdominal pain or rash, nor did she have any renal involvement. Arthrocentesis was performed on her knee and she was started on empiric antibiotics with

the working diagnosis of a septic joint. Labs were significant for elevated erythrocyte sedimentation rate, C-reactive protein, and white blood cell count. Her pain and fever persisted along with an increase of her inflammatory markers despite treatment with broad-spectrum antibiotics. She subsequently developed pain and swelling in her contralateral knee. Her joint aspirate remained sterile, with the gram stain showing neutrophils. She developed a malar facial rash on the second night of admission, which led to the consideration of non-infectious etiologies in the differential diagnosis. Rheumatologic diagnoses were considered and antinuclear antibodies and rheumatoid factor were obtained, which were both negative. On day six, she developed a purpuric rash on her lower back, legs and buttocks. She was started on high-dose steroids, which led to rapid improvement of her pain, fever and inflammatory markers. This led to a working diagnosis of HSP. Within a few days, she returned to her baseline in relation to her pain and ambulation.

Discussion While HSP is usually associated with the classical tetrad of symptoms, our patient presented with only fever and joint pain. It was important to consider atypical presentations of non-infectious etiologies given her lack of improvement on broad-spectrum antibiotics.

244 A CASE OF INFANT IN RESPIRATORY DISTRESS PRESENTING TO THE EMERGENCY DEPARTMENT

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10.1136/jim-2015-000035.243

Case Report A31 day full term male was seen at his pediatrician's office for cough, NBNB vomiting, poor feeding and diaphoresis for 2 days. He had decreased oral intake with vomiting after every feed and one wet diaper all day. He was transferred to COA ED for grunting, hypothermia, and increased work of breathing. No fever, runny nose, diarrhea, trauma or sick contacts. Review of systems otherwise negative. Physical exam HR 168 RR 60 Temp 96.1 sats 92% on 15 LPM face mask. He was crying, grunting, pale, tachypneic and dry lips. On respiratory exam he was grunting with increased work of breathing, retractions, course breath sounds, no wheezing or crackles. On cardiac exam he was tachycardic, no murmur and gallop present. Cap refill was 3–4 secs. Rest of his physical exam was normal. Differential diagnosis included sepsis, cardiogenic shock, myocarditis, congenital cardiac malformations, metabolic disorders, pulmonary etiologies Interventions: Initial VBG showed metabolic acidosis, elevated lactate of 9, BNP>5000. CXR - cardiomegaly. He was intubated, received normal saline, bicarbonate, ampicillin, cefotaxime and started on milrinone drip. Cardiac echo showed decreased function, mitral insufficiency and restrictive atrial septal defect. EKG with prolonged QtC interval. Admitted to the CVICU where he developed SVT twice needing treatment with adenosine and was started on propranolol. His TSH elevated to 90, free T4 normal. US thyroid normal started on synthroid with improvement. He had normal newborn screen, ammonia and head US

Conclusion Most common cause of congenital hypothyroidism globally is iodine deficiency followed by developmental defect of gland, defects of thyroxine and triiodothyronine production. Clinical features of TSH (Thyroid Stimulating Hormone) deficiency includes large anterior fontanelle, persistent posterior fontanelle, umbilical hernia, macroglossia, jaundice, myxedema, excessive sleeping. Other symptoms are poor feeding, poor tone, hoarse cry, hypothermia, failure to thrive, developmental delay, severe mental impairment. Diagnosis can be made by the newborn screen, high TSH, low T4, Tc-99 m pertechnate thyroid scan and US. The goal of newborn screen is to start treatment in 1–2 wks of life with levothyroxine. Most patients treated will be have normal development.

245 THIAMINE: TREATMENT IN PYRUVATE DEHYDROGENASE DEFICIENCY

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10.1136/jim-2015-000035.244

Objectives Recognize the potential use of Thiamine in the treatment of pyruvate dehydrogenase deficiency

Background The pyruvate dehydrogenase complex is composed of five components. A deficiency of any component, known as pyruvate dehydrogenase deficiency (PDH), may result in life-threatening lactic acidosis or neurologic dysfunction. A mainstay of treatment for PDH deficiency is a ketogenic diet. A subset of patients with PDH deficiency, including our patient, has responded to Thiamine.

Case Description Patient was a 5 month old female with a history of sickle cell trait who presented with increased irritability and poor feeding. Mom first noted irritability and increased emesis at 2 months that did not improve with formula changes. At presentation, her physical exam revealed microcephaly and preserved primitive reflexes. Initial lab work was normal until two days into her hospitalization when she developed a lactic acidosis with lactate 9. She was transferred to the Pediatric Intensive Care Unit for monitoring and further workup. Her feeds were held, and the acidosis corrected with intravenous fluids. Her feeds were restarted, and the bicarbonate level remained stable until discharge. Her lactate/pyruvate returned with an elevated ratio of 40, but after discussion with Genetics, she was deemed stable for discharge with close follow-up given her clinical improvement. Three days later, she returned to her primary care physician where lab work again revealed a lactic acidosis with lactate greater than 15. She was re-admitted with a genetics consult. A working diagnosis of pyruvate dehydrogenase deficiency was established, and she was started on Thiamine 200 mg daily. The following day, her lactate had improved significantly with resolution to normal values after two days. Her irritability also improved. She was discharged home on daily Thiamine. At her Genetics follow up three weeks later, she was doing well with decreased irritability and improved feeding. PDHA1 gene sequencing remains pending.

Conclusion As with our patient, PDH deficiency often presents with lactic acidosis and neurologic dysfunction. Our patient responded well to Thiamine. The use of Thiamine may prevent patients with PDH deficiency from requiring a strict ketogenic diet.

246 A CASE OF LINEAR IGA BULLOUS DERMATOSIS

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10.1136/jim-2015-000035.245

Case Report 1. Recognize Linear IgA Bullous Dermatosis as a cause of bullous rash. 2. Discuss the management of Linear IgA Bullous Dermatosis. A 21 month-old male with asthma and epilepsy presented with a 3-week history of progressive rash. The rash began on his left leg and initially looked like an insect bite, then spread to his back and mouth. Ten days prior to presentation, he developed fever and respiratory distress. He was started on Amoxicillin and antibiotic ointment for possible pneumonia and impetigo. One day later, his rash spread to his extremities, torso, back, and face, so antibiotics were discontinued. His rash worsened with increased pruritus, but his fever and respiratory symptoms improved. Five days prior to admission, he was prescribed Acyclovir for possible varicella and Cefdinir for impetigo. When his rash failed to improve, he was admitted for possible Steven Johnson Syndrome. On admission, he was noted to have diffuse bullous lesions in various stages of healing, with evidence of drainage and excoriations. He appeared uncomfortable but non-toxic. He was started on Vancomycin and Ceftriaxone for possible super-infection and Acyclovir for possible Varicella. Dermatology was consulted and diagnosed him with Linear IgA Bullous Dermatosis, later confirmed by punch biopsy. He was also diagnosed with superimposed impetigo; wound culture grew S. viridans. Vancomycin, Ceftriaxone, and Acyclovir were discontinued. His rash rapidly improved with initiation of Prednisolone, Dapsone, and Clindamycin. Linear IgA Bullous Dermatosis is a rare autoimmune disease characterized by annular bullous lesions commonly concentrated on the face, trunk, extremities, and perineum. As these lesions share features with other conditions, tissue biopsy is often utilized for diagnosis. Biopsy reveals linear deposits of IgA along the basement membrane on direct immunofluorescence. Mucosal involvement is common and lesions are often intensely pruritic. Dapsone is used for first line treatment as an immunomodulator. Immunosuppressant medications, including systemic glucocorticoids, are often used during initial treatment of severe disease to hasten clinical improvement. The clinical course is variable and can range anywhere from several months to greater than ten years, with periods of relapse and remission.

247 PERI-ANAL MASS IN A TODDLER

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10.1136/jim-2015-000035.246

Case Report A 23-month-old AA girl was referred to dermatology for evaluation of a peri-anal mass. Per grandmother, it was present for 6 months and appeared 2 weeks after the child returned from her aunt's home. On exam, she had a 4 cm by 4 cm verrucous lesion along the anus and perineum, as well as from the urethra and perihymenal area. She underwent surgical excision of the mass. The child abuse team was consulted and recommended HIV, hepatitis, and syphilis testing. HIV returned positive. On POD#1, the patient was febrile to 102.8°F. A CBC, U/A and cultures were obtained. Urinalysis showed large leukocyte esterase, no nitrites, and 3 WBC. She received Ceftriaxone to treat empirically for a UTI, but remained febrile. Urine gonorrhea and chlamydia was sent. The urine culture grew E. Coli and Enterobacter. Chlamydia was positive, and she was given Azithromycin with resolution of fever. Discussion: Sexual abuse of children is not uncommon, and pediatricians should be vigilant of pertinent complaints and exam findings. This case highlights important points including management of condylomas in children and testing for sexually transmitted infections (STIs) in sexual abuse victims. Children with evidence of sexual abuse are more likely to have genital HPV than children without such evidence (13.7% versus 1%). Initial exam for children presenting with genital warts should include *N. gonorrhoeae* and *C. trachomatis* cultures, wet mount and culture of vaginal swab for *T. vaginalis*, and serum samples for HIV, hepatitis B, and syphilis. FDA-approved nucleic acid amplification tests are acceptable in place of cultures. Providers should consider chlamydia if a urinalysis is positive for leukocyte esterase. HPV DNA typing in children and adolescents is not recommended. No treatment approach is universally successful. Treatment is reserved for severe cases, such as this case where the patient was immunocompromised. Treatment may be surgical or nonsurgical. Surgical options, including resection, cryotherapy, electrodessication, and pulsed dye, are best reserved for extensive condylomas. Nonsurgical options include podophyllin, podofilox, and Imoquimod. Clearance rates for topical agents range from 75%-88%. In conclusion, any patient with exam findings concerning for sexual abuse should be tested for all STIs at intial presentation and subsequent visits.

248 A TREATABLE MOVEMENT DISORDER: DOPA-RESPONSIVE DYSTONIA IN A 4 YEAR OLD

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10.1136/jim-2015-000035.247

Case Report Dystonia is a movement disorder characterized by involuntary muscle contractions that causes significant disability and morbidity. Dopa-responsive dystonia (DRD) is a rare form of dystonia characterized by diurnal variation in symptoms, including gait abnormalities and/or parkinsonian features, which respond to treatment with levodopa. Early diagnosis is important because the treatment of DRD can quickly and drastically improve outcomes and quality of life. We present a child with a mild head injury following a fall who was ultimately diagnosed with DRD. A 4 year old female presented following a fall while walking. Mother reported a 3 year history of abnormal gait and poor balance. Symptoms were progressively worsening, but gait and balance difficulties were less noticeable in the mornings. Family history included an

uncle with an unknown movement disorder. Exam showed brisk patellar reflexes, increased tone, clonus at the ankles bilaterally, atrophy of the calves, and supination of both feet. She ambulated slowly and in a straight line because of difficulty turning and had a wide-based, stiff-legged gait, dragging her toes. She had difficulty sitting and standing for an extended period of time without support. Workup, including head CT, MRI, CBC, and CMP, was normal. DRD was suspected based on clinical presentation and family history, and a trial of carbidopa-levodopa therapy was initiated. Her symptoms improved dramatically, and on the third day of therapy the patient was running through the hospital halls. DRD encompasses a group of genetically heterogeneous disorders with wide variability in clinical presentation, leading to a delay in diagnosis of 13.5 years on average. Among infants and young children, DRD is often misdiagnosed as cerebral palsy, juvenile parkinsonism, hereditary spastic paraplegia, or other movement disorders. A high index of suspicion for DRD and a low threshold for a levodopa trial in patients with neurodegenerative symptoms and/or gait abnormalities can result in earlier diagnosis and treatment of this debilitating, yet treatable, condition.

249 TRAUMATIC AMPUTATION OF FINGER IN A PEDIATRIC PATIENT FROM AN ALLIGATOR SNAPPING TURTLE BITE

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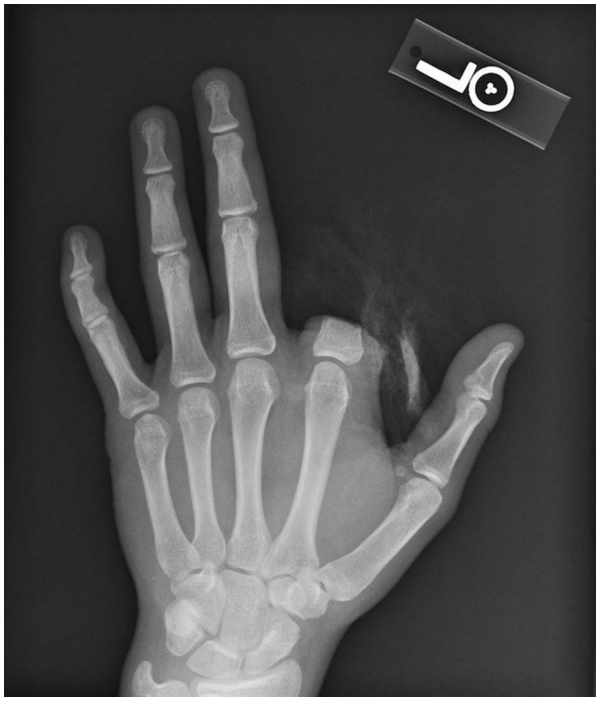
10.1136/jim-2015-000035.248

Case Report Legend states that the Alligator Snapping Turtle (Macrochelys temminckii) should be handled with extreme caution as it has the jaw strength strong enough to bite a wooden broomstick in half. Tales of bite injuries from what is the largest freshwater turtle in North America exist anecdotally, yet there are few descriptions of medical encounters for such. The risk of infection from reptilian bites to the hand in an aquatic environment warrants thorough antibiotic prophylaxis in conjunction with Hand Surgery consultation. We present the first case report of a near total amputation of an index finger in an adolescent boy who had been bitten by a wild, "Gator Snapper."



Abstract 249 Figure 1

250 INCIDENTAL DIAGNOSIS WITH ULTRASOUND

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10.1136/jim-2015-000035.249

Case Report A 14 yo African-American female presented with a six week history of recurrent fever, coughing, joint pain, and swelling of her hands and feet. She was treated at an outside hospital for bronchitis and Streptococcal pharyngitis with Augmentin. No improvement in cough or fever, so she was switched to cefdinir, then Bactrim. Continued cough prompted visit to outside hospital, where CXR showed large, left-sided pleural effusion. She was then transferred to a tertiary children's hospital for further evaluation. Patient was tachypneic and tachycardic on presentation to ED. Physical examination revealed diminished breath sounds in left lower lung, slight discoloration of nasal bridge, and swelling of hands and feet bilaterally. Laboratory findings showed H/H of 7/22.3 and creatinine of 1.1. Urine studies showed 2+ protein and hyaline casts. Bedside ultrasound noted pleural effusion and small pericardial effusion. Cardiology was consulted, and formal ultrasound showed pericardial effusion with no collapsing of right ventricle. Due to tachycardia and tachypnea, patient was started on vancomycin and ceftriaxone and was given a normal saline bolus. Continued tachycardia and decreased capillary refill with additional normal saline bolus prompted admission to ICU. Rheumatological lab studies showed decreased C3, C4 and +ANA, which led to a diagnosis of systemic lupus erythematosus. Patient medically cleared for discharge after six days of treatment in ICU. One day after discharge, patient returned to ED with seizures and was diagnosed with lupus cerebritis. She was then placed on levetiracetam, hydroxychloroquine for 6 months, and two rounds of rituximab. She was also treated with a long-term prednisone taper and received six monthly doses of cyclophosphamide, which led to improvement in her clinical condition. Pericarditis, which can lead to a pericardial effusion, is a common complication in children with SLE. Cardiac manifestations of lupus are usually asymptomatic and are frequently diagnosed with ultrasound while evaluating other symptoms. Seizures associated with SLE are more common in the early stages of the disease. Only 4/11 of the Systemic Lupus International Collaborating Clinics criteria are needed to diagnose definite SLE. Early diagnosis is important in children and adolescents, as SLE has increased negative effects in children compared to adults.

251 PAIR OF SIBLINGS WITH KABUKI SYNDROME FEATURES AND A DE NOVO MUTATION IN THE KMT2A GENE

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10.1136/jim-2015-000035.250

Case Report Kabuki syndrome is a rare syndrome associated with intellectual disability, short stature, persistent fetal finger pads, and characteristic facial features. Wiedemann-Steiner syndrome is a rare syndrome that overlaps phenotypically with Kabuki syndrome, and is associated with intellectual disability, hypertrichosis cubiti, short stature, and its own characteristic facial features. The genes implicated in both these syndromes, KMT2D and KDM6A in Kabuki syndrome, and KMT2A in Wiedemann-Steiner syndrome, are involved in similar large protein complexes that alter the methylation status of various lysine amino acids in histones, which are involved in the transcriptional regulation of currently unknown target genes. Here we describe a pair of siblings, a brother and sister, who presented with a constellation of features including developmental delay, seizures, behavioral problems, and dysmorphic features consistent with Kabuki syndrome. The brother's seizures, developmental delay, and behavioral issues resolved in young childhood, while the sister continues to have a more severe disease course, including short stature, conductive hearing loss, and unresolved developmental delay. The mother of these children had a past medical history significant for seizures as a child, but was asymptomatic otherwise. In attempting to determine the etiology of these siblings' disease, serum lactate, ammonia, plasma amino acids, urine organics, and transferrin IEF were measured, all of which were within normal limits. Comparative genomic hybridization revealed a 238 kb duplication at 6 p24.2 covering 3 genes not associated with any known clinical features in the sister, brother, and mother. Sequencing of the Kabuki syndrome genes, KMT2D and KDM6A, was normal in all family members, but sequencing of the Wiedemann-Steiner gene, KMT2A, revealed a heterozygous *de novo* mutation of unknown significance in the sister. Based on the results of the asymptomatic mother, the brother's resolved seizures and developmental delay, we suspect the chromosomal 238 kb duplication is a familial variant, which might play a role in infantile epilepsy but is further nonpathogenic, and that the Wiedemann-Steiner KMT2A mutation in the sister is causing her clinical Kabuki syndrome phenotype.

252 WARFARIN INDUCED SKIN NECROSIS: AN ADOLESCENT WITH MAY THURNER SYNDROME AND PROTEIN C DEFICIENCY

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Case Report GC is a 12-year-old Hispanic female who presented to the emergency department (ED) with left lower extremity pain, discoloration and numbness. On exam, she had findings of phlegmasia cerulean dolens. Doppler ultrasound revealed extensive left external iliac vein to popliteal vein thrombosis. Labs included: PT 25.2 seconds (sec), aPTT 58.1 sec and platelets of 145,000/cumm. She underwent IVC filter placement, mechanical thrombectomy and catheter directed thrombolysis in view of limb threatening thrombosis. She was also noted to have proximal left common iliac vein narrowing consistent with May-Thurner Syndrome, which was stented. She underwent a warfarin bridge while receiving heparin in the hospital. She was discharged but subsequently returned to the ED three days later with a tender hemorrhagic bullous lesion with extensive surrounding erythema. An ultrasound revealed a large hematoma with no thrombosis. Labs showed: PT 26.4 sec, aPTT 29 sec and INR of 2.4. Her protein C activity from her previous admission returned at less than 10%. Warfarin was discontinued and heparin initiated. She received parenteral Vitamin K and scheduled FFP. Despite FFP, her protein C activity remained <10%. Ultimately, protein C concentrates increased her protein C activity to 171%. LMWH was initiated with discontinuation of heparin. She was discharged home with protein C deficiency and warfarin induced skin necrosis. May-Thurner Syndrome has been associated with a genetic predisposition to thrombophilia including factor V Leiden in one case series. This unique case associates protein C deficiency with May-Thurner Syndrome. Additionally, warfarin induced skin necrosis is a reported but rare complication of warfarin therapy in the pediatric population. Upon warfarin initiation, protein C decreases faster than other Vitamin K dependent clotting factors leading to transient hypercoagulability. This phenomenon is exacerbated in protein C deficiency leading to diffuse microthrombi in dermal and subdermal capillaries resulting in ischemic skin necrosis and red blood cell extravasation. This case highlights the importance of understanding both the anatomic and hereditary risk factors for thrombophilia prior to initiation of warfarin therapy.

253 SEPTIC ARTHRITIS IN A PEDIATRIC KIDNEY TRANSPLANT RECIPIENT

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Purpose of Study An 11-year-old male on immunosuppressive therapy with tacrolimus, mycophenolate mofetil and low-dose prednisone following renal transplant at 2 years of age for ESRD due to posterior urethral valves presented with acute left hip pain and inability to bear weight.
Methods Used He was afebrile and denied trauma or recent illnesses. On exam, his left hip was abducted, flexed, and externally rotated. Laboratory findings showed total leukocyte count of 3,800/mm3 (83% neutrophils), sedimentation rate of 6 mm/h, C-reactive protein of <0.2 mg/dL, and elevated serum creatinine of 1.2 mg/dL (baseline 0.8 mg/dL). Noncontrast MRI demonstrated a small joint effusion and regional myositis. Because he had no fevers, leukocytosis, or elevated inflammatory markers to suggest septic arthritis, diagnosis of transient synovitis was made.
Summary of Results On the third day after admission, he

continued to have severe, refractory hip pain and developed fever, prompting surgical exploration. Open capsulotomy of the left hip revealed purulent synovial fluid with 18,165 leukocytes/mm3 (90% neutrophils). Synovial fluid cultures were negative, but blood and urine cultures ultimately grew methicillin-sensitive Staphylococcus aureus. He recovered fully after six weeks of appropriate antibiotic therapy.
Conclusions This case highlights the challenge in relying on traditional markers of infection to rule out septic arthritis in immunosuppressed children. Diagnosis of septic arthritis in immunosuppressed patients often requires strong clinical suspicion and prompt joint aspiration. Attention to synovial fluid differential in immunocompromised children may also contribute to diagnostic accuracy.

254 INFLAMMATORY MYOPATHY ASSOCIATED WITH TYPE II POLYGLANDULAR AUTOIMMUNE SYNDROME: A CASE REPORT

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Case Report A 13 year old female with history of type II polyglandular autoimmune syndrome (hypothyroidism, Addison's Disease, diabetes mellitus) presented with bilateral leg and arm pain. She endorsed pain, worse with movement, so severe she was unable to complete school assignments. Exam notable for decreased muscle strength in upper and lower extremities. MRI showed "diffuse abnormal increased signal seen throughout muscles of the thighs and pelvis with diffuse muscle enhancement of the muscles" and "persistent fluid signal in the fascial planes in the thighs bilaterally." Serologies were notable for ANA positivity (1:640 titer, speckled pattern) with negative reflex ENA panel, elevated CK (7243) with normal urinalysis, elevated aldolase and transaminitis. Laboratory values from the referral center demonstrated mild eosinophilia (raising concerns for eosinophilic fasciitis), but the patient received steroids before transfer, potentially blunting the eosinophilic response. CBC with differential at our site showed no eosinophilia. A full thickness muscle biopsy was obtained which demonstrated a non-specific inflammatory myopathy. The patient was started on Solumedrol 40 mg IV qday x 3 days and transitioned to oral prednisone. Given persistent muscle weakness, she was started on methotrexate as a steroid-sparing agent and prednisone was tapered, and her inflammatory markers normalized. We present a unique case of inflammatory myopathy associated with type II polyglandular autoimmune syndrome. Our patient did not have signs of dermatomyositis. Her hemoglobin A1C was 11.6%, suggesting inadequate control of diabetes, but not consistent with diabetic myonecrosis. Identification of the etiology of myositis is critical in determining further management. For instance, although inflammatory myositis and eosinophilic fasciitis are managed by glucocorticoid administration, diabetic myonecrosis is treated more conservatively with antiplatelet agents and anti-inflammatory agents. Literature search revealed only two reports of myositis associated with autoimmune polyglandular syndromes. This case reiterates the importance of considering a diagnosis of inflammatory myopathy in patients with diffuse muscle weakness, especially those with concomitant autoimmune disorders.

255 URACHAL CYST PRESENTING AS RECURRENT FOCAL COLITIS

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Introduction Urachal remnant is a relatively rare disorder in pediatrics, and it often leads to misdiagnosis. We present the case of a 2-year-old girl with recurrent episodes of focal colitis subsequently diagnosed as infected urachal cyst.
Case Our patient is a 2-year-old girl who presented with diarrhea, abdominal pain, fever and dehydration. On exam she was irritable and had abdominal pain. Her inflammatory markers were elevated. Her symptoms were initially felt to be due to gastroenteritis, however, her blood culture became positive for methicillin-resistant *S. aureus* (MRSA). Ultrasound showed free fluid in the right lower quadrant, a collection of loculated fluid near the bladder, and focal large bowel wall thickening. On CT, the collection was suspicious for an infected urachal remnant. Collection was aspirated and drain placed. Aspirate culture was positive for MRSA. As her ultrasound also showed small splenic nodules felt to be due to an embolic phenomenon, she completed 4 weeks of IV Vancomycin. Two weeks after treatment completion she had surgical removal of the urachal remnant, which was confirmed by pathology. In retrospect, our patient was hospitalized 9 months prior for similar symptoms, and while on ultrasound she was found to have bowel thickening, this was deemed to be due to colitis. She improved on an oral cephalosporin, and she was discharged with no further workup.
Discussion The urachus is a tubular structure that connects the allantois with the urinary bladder during embryologic development. The tract obliterates and becomes the fibrous medial umbilical ligament after birth. A persistent partially patent urachus that is separate from the bladder and umbilicus forms the urachal cyst, found in 1 in 5000 births. Diagnosis is established by imaging. Treatment is surgical removal of urachal remnant. The cyst generally remains small and silent. Symptoms may arise due to size or secondary infection as cyst becomes an intra-abdominal abscess. In our case the abscess caused local irritation of adjacent colon leading to symptoms of colitis.
Conclusion As our case illustrates, in a patient with recurrent episodes of unexplained focal colitis, an infected urachal cyst should be considered. Curative treatment is surgical as it will prevent secondary infection and malignant degeneration.

256 REFUSAL TO BEAR WEIGHT IN A 13 MONTH OLD BOY

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Case Report The presentation of a limping child offers a broad differential diagnosis, with infection being one of the most common etiologies. While most cases of septic arthritis commonly present with a more severe course, *Kingella kingae* exhibits a more indolent presentation that can be difficult to distinguish from toxic synovitis. Although often overlooked historically, *K. kingae* is becoming more widely recognized as a common pathogen of joint infections in children 6 months to 48 months old, especially in those that attend day care. We present a 13 month old boy who attends daycare with refusal to bear weight on his left leg. He has mild findings on exam of the left foot with minimal fever and only mild elevation in inflammatory markers. MRI is concerning for septic arthritis, and milky white fluid is aspirated from the subtalar joint. After inoculation into a liquid aerobic blood culture vial, *K. kingae* is identified. Improved culture methods and use of PCR have increased the diagnosis of *K. kingae* and thus targeted treatments and decreased morbidity. Current recommendations include beginning empiric antibiotic therapy for septic arthritis as soon as blood and joint cultures are obtained, and then further optimizing to a beta lactam antibiotic if *K. kingae* is suspected and/or confirmed.

257 ROUTINE FEVER EVALUATION REVEALS DEMYELINATING NEUROLOGIC PROCESS

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Case Report 4 YO black female admitted to regional facility for 5 days of fever, abdominal pain, and decreased intake and activity. No sick contacts, change in output, URI symptoms, vomiting or rash. Past medical and social history noncontributory. Vaccines up to date. Mother had history of Lyme disease that led to Guillian Barre. Temp 102.4 with physical exam remarkable for mild abdominal tenderness. Labs: WBC 30, 92% neutrophils. CRP 12. UA 1+ protein, WBC 5. Rapid flu, strep and strep culture negative. Abdominal series negative. Stool studies negative. Day 1, developed diarrhea and vomiting, with continued fever. Day 2, chest XR, pelvic ultrasound, and EBV titers negative. Renal US had right kidney increase echogenicity. UA trace leukocyte esterase and 7 WBC. Due to recurrent fever and renal US, ceftriaxone 100 mg/kg/d started. Day 3, continued to have abdominal pain with new back and vaginal pain; however, was somewhat playful. Day 4, developed headache and neck pain without meningismus. Patient more active. WBC and CRP improved to 17.8 and 2.3 respectively. Temp 101. With improvement, patient discharged with oral antibiotics and diagnosis of viral infection vs UTI. Day after discharge, patient worsened with inability to bear weight. Readmitted to tertiary care center. Next day developed decreased speech and bilateral clonus. Head CT negative. LP with 247 WBC, 2 RBC, mild increased protein and normal glucose. MBP normal, negative for NMO antibody, HSV, enterovirus, autoimmune encephalopathy and MS panels. Had negative ANA, enterovirus PCR, anticardiolipin, antiphosphatidylethanolamine, viral respiratory panel and stool enterovirus. Day 3, ceftriaxone restarted. Patient lost ability to speak and eat. By day 6 mental status did not improve. MRI showed patchy demyelination extending from thalami to spinal cord, raising concern for neuromyelitis optica (NMO). High-dose steroids started. Patient improved over next week, and LP findings resolved. Patient discharged with 6-week course steroids. This pediatric case of altered mental status with brainstem lesion demonstrates importance of follow-up for therapeutic and diagnostic purposes. Currently most accurate diagnosis remains unknown, but differential diagnosis includes NMO, acute disseminated encephalomyelitis, or other acute demyelinating process.

258 TOPIRAMATE INDUCED MYOPIC SHIFT WITH ANTERIOR ANGLE CLOSURE IN A 16 YEAR OLD FEMALE WITH HISTORY OF MIGRAINES

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Case Report Topiramate (brand name Topamax) is a medication that is widely used for the treatment of seizures and prophylactally for migraines. Though topiramate has several side effects, the more concerning are acute myopia and secondary angle closure glaucoma. Symptoms of can include an acute onset of ocular complaints like decreased visual acuity and/or ocular pain. When noted in a patient, immediate ophthalmology evaluation is warranted. Findings on ophthalmological exam can include myopia, shallowing of the anterior chamber, increased intraocular pressure, and ocular hyperemia. We present a case of a 16 year old white female who was started on twice daily topiramate for the treatment of migraine headaces. The patient had developed blurry vision within a week of starting the medication. She returned to the emergency department for further evaluation and was seen by ophthomology. The patient was noted to have myopic shift with anterior angle closure. The topiramate was stopped, and the symptoms resolved fairly quickly. This condition is important for practitioners to be aware of, especially if they have patients that are on topiramate, recently started on topiramate, or are considering using topiramate on their patients. Though this is a not so common side effect of the medication, the practitioner should be diligent in educating patients about this condition. The practitioner should alert the patient that if signs or symptoms of acute angle occur, the patient should immediately stop the topiramate and seek medical attention, mainly ophthalmology intervention.

259 ATYPICAL PRESENTATION OF NEONATAL HEMOCHROMATOSIS

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Case Report Neonatal hemochromatosis (NH) is one of the leading causes of acute liver failure in the neonatal period. Ninety-five percent of cases result from gestational alloimmune liver disease, in which maternal alloantibodies

to a fetal hepatocyte antigen cross the placenta and attack fetal hepatocytes. Liver damage leads to a loss of inhibition of iron absorption resulting in hepatic and extra-hepatic iron deposition. Diagnosing NH relies on a strong clinical suspicion and confirmation with identifying extra-hepatic siderosis on MRI or a buccal biopsy; together these tests have a sensitivity nearing 80%. We report a 31 5/7 week infant who presented with intrauterine growth restriction, oligohydramnios, hypoalbuminemia, anemia and thrombocytopenia at birth. The patient's course also included anuria/oliguria, coagulopathy, minimal AST elevation, and a direct hyperbilirubinemia. A workup for NH was performed after ruling out infection. Ferritin was mildly elevated, alpha-fetal protein was normal, iron was normal with an elevated transferrin saturation and increased TIBC. MRI and buccal biopsy did not demonstrate extra-hepatic siderosis. Due to the clinical suspicion for NH, the patient was treated twice with an IVIG infusion. Liver dysfunction continued and her clinical condition deteriorated. She died on day of life 23 from infectious complications. An autopsy demonstrated extrahepatic siderosis of the pancreas and thyroid confirming NH. This case reaffirms the clinical presentation of NH and highlights the importance of clinical suspicion in the face of negative confirmatory tests. For infants presenting with neonatal acute liver failure without a known underlying cause, empiric treatment with IVIG should be considered. While the fetal antigen is unknown, like Rh disease, maternal sensitization can impact future pregnancies. IVIG infusions during subsequent pregnancies can reduce the incidence of NH. Given the impact of the diagnosis on future pregnancies, an autopsy to confirm the diagnosis in fatal cases should be strongly encouraged.

260 EFFECT OF PRETERM PATENT DUCTUS ARTERIOSUS AND TRANSCATHETER DEVICE CLOSURE ON MANAGEMENT OF THE PULMONARY VASCULAR BED

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Purpose of Study Patent ductus arteriosus (PDA) is a common clinical condition in preterm infants with hemodynamic consequences of systemic hypo-perfusion and pulmonary hypertension. The evidence remains equivocal in conservative versus medical or surgical management in terms of mortality as an outcome. We sought to assess the effect of the PDA and its transcatheter device closure on the pulmonary vascular bed.

Methods Used A review of 100 consecutive children who underwent trans-catheter device closure of PDA was performed. Preterm infants who had a diagnostic right heart catheterization were chosen. Hemodynamic measures including Qp:Qs, pulmonary systolic pressure as a percentage to systemic pressure(PAP%) and pulmonary vascular resistance(PVR, expressed as wood units.m^2) were measured at baseline, with 100%Fio2 and 20 ppmiNO(condition2) and after test occlusion of the PDA(condition3). Other outcome measures evaluated were growth rate improvement (expressed as percent) and time to extubation.

Summary of Results There were 33 preterm infants, of which 17 were ≤2.5 Kg, 12 were ventilator dependent. The Median gestational age of this sub-group was 27 weeks (23–32 weeks). The median age and weight at the time of the procedure were 6 weeks (4–16 weeks) and 1.6 Kg (1.06–2.5 Kg) respectively. The primary indication for closure was pulmonary hypertension associated with chronic lung disease in 11 (65%), and left ventricular volume overload in the rest. Diagnostic right heart catheterization was done in the 11 with suspected pulmonary hypertension. The mean baseline Qp:Qs was 2.2:1 which increased to 4:1 with condition2 and down to 1 with condition3 as expected. The mean PAP% was 78% which decreased to 42% with condition 2 &3 as did the PVR (baseline: 4.1, condition2: 1.9, condition3: 2.1). There was a 33% increase in growth rate as measured 90 days post device closure. The median days for extubation was 17.

Conclusions Apart from systemic hypoperfusion and left ventricular volume overload, pulmonary hypertension is a significant morbidity related to the preterm ductus arteriosus. The pulmonary vascular bed remains reactive to pulmonary vasodilator therapy. Transcatheter device occlusion of the ductus enables appropriate management of pulmonary hypertension with pulmonary vasodilator therapy.

261 DIASTROPHIC DYSPLASIA – A RARE DISORDER AND A RARE ASSOCIATION

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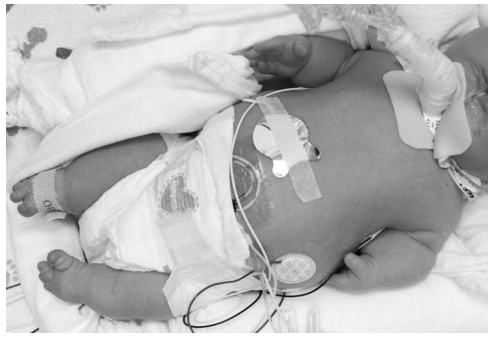
Case Report Diastrophic dysplasia is a rare genetic disorder. Its name was first coined in 1960 due to the "twisted" appearance of the spine and limbs in affected individuals. Inheritance pattern is autosomal recessive and features include limb shortening, normal-sized skull, hitchhiker thumbs, spinal deformities and club foot. Diagnosis rests on combination of clinical and radiologic features, mortality is high .We report a neonate with clinical features of dystrophic dysplasia and a rare association of Pierre Robin Sequence.

Case Presentation 35 week gestational age female born to a 23 year old mother whose pregnancy was complicated by preterm labor and fetal anomalies. Fetal ultrasound showed skeletal abnormalities seen as shortened extremities and "abnormal fetal spine" resulting in suspicion of dwarfism or aneuploidies. Prenatal aneuploidy screen were all negative. Apgar scores were 1, 2 and 3 at 1, 5 and 10 minutes of life. Physical examination showed micrognathia, glossoptosis and cleft palate (Pierre robin Sequence), short extremities, broad nasal bridge, small trunk, persistently abducted thumb (hitchhiker thumb), cleft palate, and cystic lesion on the pinna. Infant was intubated and had tracheostomy placed . Echocardiography, renal and pelvic ultrasound were normal but skeletal survey showed features of diastrophic dysplasia which include cervical kyphosis, hind foot varus, foreshortening of extremities, and hitchhiker thumb. Screening for mutation in SCL26A2 gene confirmed the diagnosis and she will be followed up by orthopedic and medical genetics on outpatient.



Abstract 261 Figure 1

Conclusion This report supports and increases the awareness of the association of Pierre robin sequence and diastrophic dysplasia especially when the clinical and radiographic features are present.

262 THE ARTERIAL INTIMA-MEDIA THICKNESS IS ABNORMAL IN CHILDREN WITH CONGENITAL HEART DISEASE DESPITE SUCCESSFUL REPAIR

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Purpose of Study To prospectively assess for evidence of vascular proliferation via Intima-Media Thickness (IMT) analysis in children with non-complex CHD at least 5 years after successful repair.

Methods Used Between 6/2013 through 9/2015, a total of 67 subjects (50.8% males) were enrolled, including 22 pediatric patients with CHD (Group I, age 11.9±4.1 y); 25 pediatric controls (Group II, age 11.6±3.7 y) matched for age, sex, race; and BMI; and 20 young adult controls (Group III, age 21.1±3.0 y) matched for sex and race. IMT was analyzed at four vascular segments using high-resolution external ultrasound. Excluded were individuals with standard atherosclerosis risk factors.

Summary of Results Compared to pediatric controls, IMT was increased in CHD patients at all vascular sites: carotid IMT was 0.40±0.04 mm vs. 0.47±0.09 mm, $p<0.001$; brachial IMT was 0.26±0.03 mm vs. 0.28±0.02 mm, $p<0.05$; femoral IMT was 0.35±0.04 mm vs. 0.41 ±0.12 mm, $p<0.001$; and aortic IMT was 0.50±0.09 mm vs. 0.64±0.19 mm, $p<0.01$. The degree of IMT increase in CHD patients was comparable to that of young adults (carotid IMT 0.43±0.06 mm; brachial IMT 0.28 ±0.02 mm; femoral IMT 0.42±0.08 mm; aortic IMT 0.61 ±0.10 mm) suggesting premature vascular aging.

Conclusions In pediatric patients with non-complex CHD, successfully repaired in infancy, IMT was abnormal at multiple sites suggesting vascular proliferation. These data add to previously collected evidence in our lab of early metabolic and functional changes that this population may be at risk for premature vascular aging.

263 ENDOVASCULAR DE-BANDING OF PULMONARY ARTERIES IN A SWINE MODEL

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Purpose of Study A pulmonary artery (PA) band is sometimes placed in infants for transient palliation of ventricular septal defects (VSD). However, in many cases the VSD may close spontaneously after PA banding. These children must undergo a sternotomy, and in some cases, be placed on cardiopulmonary bypass for the sole purpose of band removal. Ideally, PA de-banding may be accomplished through less invasive methods. We hypothesized that PA de-banding may be achieved safely via cardiac catheterization using balloon angioplasty. The primary objective of this study was to determine the feasibility and safety of this procedure in a swine model. The secondary objectives were to determine the acute and long term effects of this therapy.

Methods Used A poly-ethylene terephthalate band was placed around either the main pulmonary artery (MPA) or the left pulmonary artery (LPA) in 8 piglets via a thoracotomy. Following a three-fold increase in weight, the piglets underwent PA de-banding via balloon angioplasty. Four piglets were sacrificed to evaluate the acute effects. The other 4 piglets were followed to evaluate the long-term effects. Histopathology studies were performed on all piglets.

Summary of Results At a mean weight of 2.6 kg, the MPA was banded in 3 piglets and the LPA in 5 piglets. Endovascular de-banding was performed at a mean weight of 7.4 kg. The mean systolic gradient across the band was 21 mmHg prior to intervention. Balloon angioplasty resulted in successful de-banding in all 8 piglets. The mean post-intervention gradient was 5 mmHg. Microscopic examination demonstrated<2+ medial dissection in the 4 piglets belonging to the acute model. All 4 piglets in the chronic model required 1–2 re-interventions for residual stenosis at the band site at mean weights of 26 kg and 52 kg. There was no residual stenosis after re-angioplasty. There were no procedure-related hemodynamic, gross or microscopic complications.

Conclusions Endovascular PA de-banding can be safely achieved in a swine model. Repeat angioplasty following de-banding may be necessary to treat residual stenosis. This catheter-based therapy may provide a less-invasive alternative to surgery.

264 FROM NONDESCRIPT TO ADMITTED: A PRESENTATION OF KINGELLA KINGAE ENDOCARDITIS

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Case Report *Kingella kingae* is a gram-negative coccobacillus that is part of the HACEK group of organisms. As a group they are responsible for an estimated 5% of endocarditis cases. In children however, Kingella is more likely to present as a causative organism in osteoarticular infections and bacteremia. Endocarditis, however, is a rare but potentially severe manifestation. Our patient was a 5 year old Female with a previous cardiac history of aortic coarctation requiring balloon angioplasty at 2 years of age who presented with nondescript and intermittent symptoms including malaise, low-grade fever, night sweats and rare cough. She appeared nontoxic with stable vital signs. Lab values were normal except for an increased CRP, ESR and slightly increased white count. Echocardiography performed in the ER showed no signs of vegetations or structural anomalies. The patient improved clinically while in the ER. She was discharged home after consultations with cardiology, given one dose of Rocephin and strict follow-up plan with her pediatrician. Patient was called to return to be admitted after blood culture grew *Kingella kingae*. Though the patient clinically improved as an outpatient, Transesophageal echocardiography demonstrated new mitral regurgitation as well as new anterior mitral valve cleft concerning for erosion by a vegetation. The patient was thereafter treated with a 4 week course of IV antibiotics and had no further sequelae. Endocarditis, though rare, should be suspected in young patients with history of previous cardiac anomalies. Seemingly nondescript symptoms may be an early indication of endocarditis. A species like *Kingella kingae* that has adequate antibiotic sensitivities poses a serious threat when endocarditis is suspected. Untreated or caught late, Kingella may be devastating leading to septic emboli, abscess formation, cardiac decompensation, and death.

265 'THE WORST THING I'VE EVER SEEN': A CASE OF SEVERE BULLOUS IMPETIGO

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10.1136/jim-2015-000035.264

Case Presentation Our patient is a previously healthy 2 year old female who presented with a 3 day history of fever, diffuse whole-body maculopapular rash, and a newer rash consisting of large, fluid-filled bullae and significant superficial desquamation on her lower abdomen, back and groin without any mucosal involvement. She met sepsis criteria on presentation with fever 40.6 F, tachypnea, and tachycardia; labs were remarkable for a CRP 146 mg/L, procalcitonin 92 ng/ml and WBC count 19,000/mm3. She was presumptively diagnosed with Staphylococcal Scalded Skin Syndrome (SSSS) and started on vancomycin and ceftriaxone. On day 2, she began developing multiple new bullae and extensive desquamation areas which appeared deeper and atypical for SSSS and large areas of violaceous discoloration and mottling over her back, lower abdomen, genitals and thighs. Pediatric surgery ruled out necrotizing fasciitis, and dermatology suggested her clinical picture was more supportive of severe bullous impetigo with toxin mediated eruption. Initial wound cultures grew pansensitive Staphylococcus aureus and Escherichia coli. ID was consulted for appropriate long term antibiotic management and she was switched to IV nafcillin. Although her skin ulceration and desquamation was most impressive, our patient improved with total 14 days IV antibiotic therapy and aggressive wound care with progressive healing of wounds without scarring and normalization of inflammatory markers.

Discussion Bullous impetigo is a form of impetigo seen primarily in young children (<5years) in which vesicles enlarge to form large flaccid bullae with clear yellow fluid; ruptured bullae leave thin brown crusted erosions or ulcers. It is due to strains of Staphylococcus aureus that produce exfoliative toxin A, a toxin that causes loss of cell adhesion in the superficial epidermis by targeting the protein desmoglein 1.

Conclusion This case illustrates the importance of understanding the range of clinical presentation of skin and soft tissue infections and highlights the need to revisit a diagnosis if the course is atypical for a given disease. It also demonstrates the multidisciplinary approach often required for these pediatric patients.

266 LEFT VENTRICULAR ASSIST DEVICE PLACEMENT IN A NEONATE WITH ENTEROVIRUS MYOCARDITIS

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10.1136/jim-2015-000035.265

Case Report Enterovirus myocarditis is a rare but potentially devastating disease in the neonatal period with severe cardiac sequelae occurring in a majority of patients and mortality as high as 31%. Previous case reports have described the use of extracorporeal membrane oxygenation (ECMO) as a bridge to heart transplantation in neonates with fulminant heart failure secondary to viral myocarditis. We report a case of enterovirus myocarditis in a neonate who underwent left ventricular assist device (LVAD) placement as a bridge to heart transplantation. A term male infant presented to his pediatrician on day of life 6 with fever and difficulty feeding. He was admitted for a routine sepsis workup but developed worsening respiratory distress prompting further investigation. Polymerase chain reaction testing of cerebrospinal fluid and blood were positive for enterovirus. A chest X-ray showed cardiomegaly and bilateral pulmonary edema. An echocardiogram revealed a structurally normal heart with severely diminished left ventricular function. He was transferred to the cardiovascular intensive care unit on day of life 9 where he required inotropic support for worsening hypotension and signs of decreased cardiac output. He underwent a balloon atrial septostomy on day of life 15 for severe left atrial hypertension secondary to persistent left ventricular dysfunction, and a Berlin Heart EXCOR Pediatric LVAD was placed on day of life 18. An intraoperative myocardial biopsy revealed lymphocytic infiltrates and interstitial fibrosis consistent with viral myocarditis. At 3 months of age, the patient is extubated and stable on LVAD support while awaiting heart transplantation. Medical management of heart failure secondary to enterovirus myocarditis is limited, and heart transplantation remains the only definitive treatment for neonates with severe heart failure. The use of left ventricular assist devices such as the Berlin

Heart in cases of neonatal enterovirus myocarditis may provide an alternative to ECMO support and serve as a bridge to heart transplantation.

267 CONCURRENT KAWASAKI DISEASE AND COXSACKIE INFECTION IN A 2 MONTH OLD INFANT- A DIAGNOSTIC CHALLENGE

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10.1136/jim-2015-000035.266

Introduction Children with atypical kawasaki disease (KD) are more likely to be at the extremes of age spectrum as compared to those with complete presentation. Here we report a case of atypical KD in a 2 month old child associated with coxsackie virus infection.

Case Report 2 months old male who received vaccinations 1 day prior to admission presented with fever of 103F and 1 week of upper respiratory symptoms. Workup including urinalysis, CBC, basic metabolic panel, rapid RSV, rapid influenza, CSF analysis and chest Xray were normal. Child was started on broad spectrum antibiotics. Despite starting antibiotics, patient had persistent fever but also developed bilateral non-purulent conjunctivitis, diffuse macular rash, swelling of hands and feet. Echocardiogram was obtained for intermittent tachycardia, persistent fever and respiratory distress and was found to be normal. Respiratory viral PCR was positive for coxsackie virus. Patient developed ascites due to hypoalbuminemia. Repeat echocardiogram showed biatrial and ventricular enlargement with no coronary involvement. He did receive 1 dose of IVIG on day 6 of admission for suspected coxsackie sepsis. Immunodeficiency panel and HIV antibodies were negative. Cultures including blood, CSF and urine were always negative and antibiotics were discontinued. Child continued to have fever and intermittent tachycardia. Repeat echocardiogram showed 3.5 mm diameter diffuse ectasia affecting the proximal right and left coronary arteries. The cardiac enzymes CKMB and troponin I were elevated along with ESR (107 mm/hr). Child received second dose of IVIG and was started on high dose aspirin. The child then became afebrile with stable heart rate and the ESR trended down to 26 mm/hr. High dose aspirin was then changed to low dose aspirin and child was discharged home in stable condition. Hence we conclude that atypical KD should be considered even in infants <3 months of age where the diagnosis is often challenging due to its incomplete presentation specially if diagnosis is complicated by concomitant viral infection.This case is also interesting due to the possible association of KD with coxsackie virus. Despite there are studies showing association of different viruses, there are only few reported cases of coxsackie associated with KD.

268 GRADENIGO'S SYNDROME: A RARE COMPLICATION OF OTITIS MEDIA

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Case Report We present the case of an 11 year old female who developed acute right sided otorrhea and otalgia, without fevers, vertigo, or tinnitus. This occurred while she was swimming frequently while on vacation. She sought medical care and was prescribed several otic drops but the ear drainage persisted. After 6 weeks she presented to the emergency department with right 6th nerve palsy, continued ear drainage, and otalgia. MRI with gadolinium demonstrated an erosive lesion involving the right petrous apex with adjacent dural enhancement. A CT of the internal auditory canal demonstrated and opacified middle ear, mastoid air cells as well as lytic changes of the petrous apex with eroded carotid canal, medial and lateral cortices. Her symptoms and evaluation were consistent with right Gradinego's syndrome. There are several treatment options to treat this present day rare complication of otitis media. She responded well to conservative management with resolution of her presenting symptoms and was discharged home on IV antibiotics. At follow-up, she remained asymptomatic and had no complaints.

269 UNCOMPLICATED RIGHT SHOULDER PAIN BECOMES A COMPLICATED DIAGNOSIS

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10.1136/jim-2015-000035.268

Case Report Liver abscesses are a common health problem among children in developing countries. The majority of childhood liver abscesses are pyogenic in origin, with *Staphylococcus aureus* as the most common pathogen worldwide. It remains uncommon in developed countries except in children with septicemia, major debilitating diseases, immunodeficiencies, sickle cell disease, and immunosuppression. Our patient is a 15 year old boy who presented with right shoulder pain, abdominal pain, and fever. On exam, he had no tenderness over his right shoulder or scapula and only mild tenderness to palpation over his right upper quadrant. Laboratory evaluation revealed a normal liver panel, normal white blood cell count with mild eosinophilia, and mildly elevated C-reactive protein (1.6 mg/dL). CT scan of the abdomen revealed a small fluid collection in the right hepatic lobe concerning for an abscess. Percutaneous drainage was performed, and 6 cc of purulent fluid was removed which grew methicillin sensitive *Staphylococcus aureus*. Initial blood culture was negative, and he responded to IV oxacillin. Immunoglobulins were normal, but Immunoglobulin E was elevated at 6083 IU/mL (normal 0–200 IU/mL). Stool was negative for ova, cysts and parasites, and Toxacara and Strongyloides antibodies were negative. He completed a four week course of cephalexin with resolution of his liver abscess, but IgE levels remained elevated (7099 IU/mL). Despite his very mild history for recurrent infections, genetic testing was sent for hyperimmunoglobulin E recurrent infection syndrome (HIES). HIES is characterized by elevated Immunoglobulin E, eosinophilia, and recurrent infections, most commonly with *Staphylococcus aureus*, due to impaired neutrophil function. With the advent of genetic testing, milder disease presentations have been identified. Though our patient did not have a history of chronic infections, his invasive infection with a very sensitive organism

and his unexplained eosinophilia and elevated IgE levels led to a diagnosis of possible Hyper IgE syndrome.

270 BECKWITH-WIEDEMANN SYNDROME AND 2Q37 MICRODELETION SYNDROME DUE TO A PATERNALLY INHERITED UNBALANCED 2;11 TRANSLOCATION

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Case Report We present a macrosomic Caucasian female born at 29 weeks with macroglossia. Karyotype was normal. Array comparative genomic hybridization revealed 2q37 monosomy and 11 p15.5 trisomy. This was confirmed via fluorescent in situ hybridization. Using all three cytogenetic methods, the patient's rearrangement was described as 46,XXder(2)t(2;11)(q37.3;p15.4). Dual distal deletions and duplications of chromosome material raised suspicion for parental balanced translocation. Due to the triplication of material at 11 p15.5 (an imprinted region) and the patient's phenotype, it was more likely that this unbalanced translocation was paternal in origin. Her father was confirmed to have 46,XY,t(2;11)(q37.3;p15.5). Our patient was diagnosed as having both the 2q37 microdeletion syndrome and Beckwith-Wiedemann Syndrome. Our patient displays features of 2q37 microdeletion syndrome including dilated ventricles, an anterior horn cyst, and a lateral ventricle cyst, and features of BWS including macrosomia, macroglossia, and an umbilical hernia. Her clinical course was complicated by poor oral feeding, bronchopulmonary dysplasia, and episodes of desaturations and bradycardia. This translocation/duplication event is one of the rarest (<1%) mechanisms causing BWS. Recurrent risk analysis predicts a future unbalanced translocation risk between 8.5–22.5% and a miscarriage rate of 26% (including background risk of 20%). Family history revealed multiple generations of paternal relatives with recurrent pregnancy loss. If our patient's father has female relatives who share the balanced translocation, it is possible her offspring could have the 2q37 microdeletion and Russell-Silver syndrome (due to differences in maternal versus paternal imprinting). This case illustrates the importance of understanding imprinting disorders to appropriately identify the at-risk parent, obtaining family history, and utilizing different methodologies of cytogenetic evaluation to appropriately obtain a diagnosis. It also represents a unique dual-diagnosis for which important management and screening recommendations exist.

271 GENITAL ULCERATIONS IN A SEXUALLY INACTIVE FEMALE DUE TO A COMMON ADOLESCENT VIRUS

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10.1136/jim-2015-000035.270

Case Report A 14-year-old female presented to the Emergency Department with genital ulcerations and worsening dysuria. Ten days prior, she began experiencing intermittent nausea and vomiting with subsequent fever. Initially, she was diagnosed with a urinary tract infection via urinalysis and placed on Bactrim. She was later switched to Suprax for worsening symptoms. On the day of presentation, she was seen her by pediatrician, who noted the genital ulcerations and referred her to the Emergency Department to rule out a sexually transmitted infection. On physical exam, the only positive findings were two purulent ulcerations on the inner surface of the labia majora and a single small inguinal lymph node. Her past medical history included ADHD and syncope. In addition, the patient denied history of sexual activity or abuse when questioned separately. Our initial laboratory work-up included blood counts and chemistries, all of which were within normal limits. Although the urinalysis was suspicious for a persistent urinary tract infection, it did not explain the patient's genital lesions. Further infectious studies included genital cultures and cytology for HSV and H. ducreyi, blood tests for HSV, HIV, syphilis and Ebstein Barr Virus, and urine PCR for Chlamydia and Gonorrhea. All were negative, except for a postive Monospot. She was discharged with a diagnosis of mononucleosis. On follow-up with Infectious Disease, all remaining tests for sexually transmitted infections were negative and EBV titers were elevated, confirming the diagnosis. The patient's illness resolved with supportive care. This patient illustrates a rare but reported presentation of mononucleosis with genital ulcerations. While this presentation is described in the literature, EBV is often not part of the differential diagnosis for an adolescent with genital ulcers on physical exam. This case illustrates the concept of common diseases presenting in uncommon ways and the value of keeping an open mind to a seemingly unlikely diagnosis.

272 A CHILD WITH ACUTE DISSEMINATED ENCEPHALOMYELITIS AND SECONDARY PULMONARY EMBOLISM: A CASE REPORT

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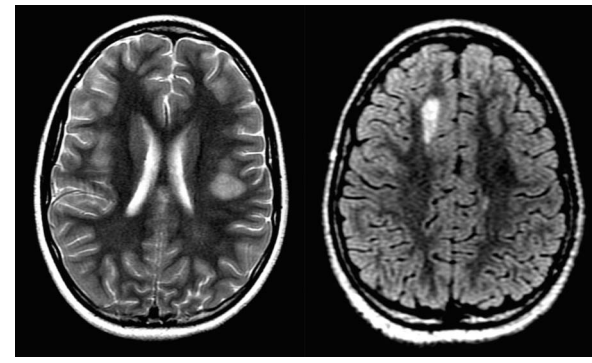
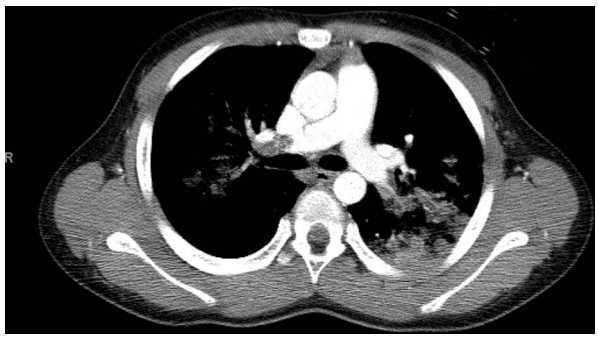
10.1136/jim-2015-000035.271

Case Report Acute disseminated encephalomyelitis (ADEM) is a multifocal inflammatory condition that affects



Abstract 272 Figure 1 Patient's contrast MRI T2 and FLAIR images showing ADEM lesions of the periventricular white matter and bilateral frontal gyri.



Abstract 272 Figure 2 Patient's helical chest CT image showing right pulmonary artery embolism with subsegmental involvement of the left side.

the central nervous system resulting in neurological deficits and encephalopathy. ADEM generally affects children and young adults. It can be rapidly progressive and requires high-dose steroids to prevent morbidity and mortality. However, steroids are associated with adverse effects. The case is a 9-year-old previously healthy African American male hospitalized for ADEM who was transferred to the pediatric intensive care unit for acute-onset respiratory symptoms following treatment with high-dose steroids (Fig 1). Diagnostic work-up revealed an elevated D-dimer and a large, bilateral segmental and subsegmental pulmonary embolism (PE) that was treated with enoxaparin (Fig 2). No literature exists correlating ADEM or corticosteroid use with acute PE in pediatric patients. Further studies are needed to identify high-risk patients in the general pediatric population.

273 SEPTO-OPTIC DYSPLASIA IN A SUSPECTED METABOLIC DISORDER

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10.1136/jim-2015-000035.272

Case Report Septo-Optic Dysplasia (SOD) is a heterogeneous condition classically consisting of optic nerve hypoplasia, pituitary hypoplasia, and midline neuroradiologic abnormalities such as an absent septum pellucidum or corpus callosum agenesis. While the incidence is 1 in 10,000 live births, clinicians should have a strong suspicion for the syndrome since affected infants can have an increased risk of sudden death associated with febrile illnesses. We report a 39 week male with an uncomplicated pregnancy, delivery and normal newborn screen (NBS) who on day of life 3 had apnea, cyanosis, and decreased activity and tone consistent with seizures. The infant was transferred to our NICU for evaluation of a metabolic disorder, after a repeat NBS had an elevated tyrosine and serum plasma amino acids had elevated tyrosine and phenylalanine. Repeat NBS, serum plasma amino acids and urine organic acids at our facility were normal and initial abnormalities were likely due to decreased liver perfusion sustained during his seizures. His thyroid function tests were consistent with hypothyroidism and endocrinology recommended starting synthroid. The infant had no repeat seizures, but remained hospitalized with poor feeding and persistent indirect hyperbilirubinemia despite synthroid supplementation and normalization of thyroid function. Given the unusual history and feeding difficulties, a developmental evaluation was performed. An occupational therapist noted poor visual tracking and an eye exam demonstrated bilateral optic nerve atrophy. A head ultrasound, obtained at the outside facility and initially interpreted as normal, was reviewed by our pediatric radiologist and revealed an absent septum pellucidum. A more extensive endocrinology work up revealed hypopituitarism, growth hormone and hydrocortisone were started with improvement in feeds and hyperbilirubinemia. SOD presentation varies widely and early signs of hypopituitarism can be mistaken for sepsis or metabolic disorders. The diagnosis relies on clinical suspicions as well as consultation with pediatric specialists. Diagnosising SOD requires early recognition in order to initiate interventions and lessen poor outcomes. A multidisciplinary approach is imperative including ophthalmology, endocrinology, and physical, occupational and speech therapists.

274 A CASE OF NEONATAL INTRACRANIAL HEMORRHAGE IN MONOALLELIC BOLZANO MUTATION FORM OF BERNARD SOULIER SYNDROME

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10.1136/jim-2015-000035.273

Case Report Bernard Soulier syndrome is an inherited platelet disorder that is characterized by thrombocytopenia, large platelet size and defective platelet function. Traditionally, this has been viewed as an autosomal recessive disorder characterized by early childhood bleeding symptoms i.e. epistaxis, ecchymosis, gingival and cutaneous bleeding and gastrointestinal bleeding. In 2001, a rare heterozygous mutation, Bolzano mutation, in the GPIbα gene was discovered in in a series of Italian families. Clinically, these patients were described to have variable bleeding presentations, with epistaxis, gingival bleeding, easy bruising and menorrhagia as the most common symptoms with 60% of patients with no history of bleeding and very few with severe hemorrhagic episodes. We present a Louisiana patient of Italian descent that was found to have the Bolzano mutation in the setting of a clinically devastating bleed. He initially presented on day of life 1 with a grade 3 intraventricular hemorrhage. The patient went on to develop hydrocephalus requiring a VP shunt and developed seizure disorder, diabetes insipidus, and partial blindness as a result of this brain injury. During the workup for this significant bleeding event, the maternal history of dysfunctional platelets and thrombocytopenia consistent with Bernard-Soulier syndrome was revealed, as well as history of bleeding problems in the maternal bloodline. Further work-up included genetic testing for Bernard-Soulier syndrome which demonstrated a heterozygous c.515C>T change in the gene encoding for GPIbα, consistent with the Bolzano type mutation. We present this patient to demonstrate a rarely seen mutation and a clinical outcome uncommon to this disease process. The patients that have

previously been described with the Bolzano mutation have rarely had such a catastrophic bleed as seen in our patient. Therefore, it is important to be aware that this mutation can be found outside of Italy and that clinically significant bleeding can occur in these patients.

275 GROWTH CURVES FOR FEMORAL VEIN AND ARTERY IN CHILDREN UNDER FOUR YEARS OF AGE

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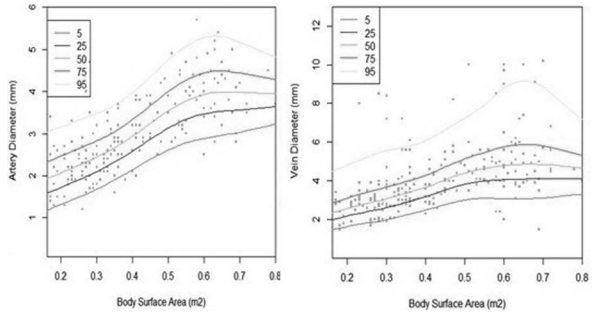
10.1136/jim-2015-000035.274

Purpose of Study The femoral vein (FV) and artery (FA) are the most common vessels used for catheter access in children. However, nomograms based on the sex, race, age or size of children are not available at present.This knowledge may be of fundamental importance for pediatric interventional cardiologists who use these vessels to perform interventions, requiring varying catheter and sheath sizes. The objective of this study was to construct growth curves for FV and FA in children≤4 years of age.

Methods Used A prospective study was performed on 400 children with congenital heart diseases≤5 years of age undergoing cardiac catheterization procedures over a 20 month period. Patients who had previous cannulation of these vessels were not included in this study. Ultrasound evaluation was performed under anesthesia just prior to obtaining access on both the right and left FV and FA. The diameter and the cross sectional area (CSA) of these vessels were measured at a level just proximal to the bifurcation of the common FA. Regression modeling was applied to derive growth curves based on quantile polynomial regression.

Summary of Results Growth curves were constructed for the diameter and CSA of the FA and FV against patient age and body surface area (BSA). Distinction for sex and race was not made secondary to the small sample size. Only the right femoral vein and artery was used for analysis. The Figure below illustrates the findings.

Conclusions It is now possible to predict the normal diameter of the femoral vein and artery, and these nomograms may help with planning an interventional procedure.Future studies with larger sample size may be useful.



Abstract 275 Figure 1 Growth Curves for Femoral Vein and Artery Diamter by Body Surface Area.

276 SECONDARY HLH FOLLOWING INFECTION WITH PARVO B19

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10.1136/jim-2015-000035.275

Case Report Macrophage Activation Syndrome/ Hemophagocytic Lymphohistiocytosis (MAS/HLH) is caused by excessive activation of T lymphocytes and macrophages that exhibit hemophagocytic activity. It is a rare, potentially fatal disease and is commonly associated with Juvenile RA. Cases of secondary HLH have been reported following a viral infection. EBV is the usual cause however few cases have been reported following infection with Parvo B19. Most often the bone marrow is involved but damage can be seen in any organ. An 8 year old AA female with PMH of anemia was transferred from an outside hospital for a higher level of care. Three days prior to admission, she was seen for fatigue, weakness, vomiting, and was diagnosed with viral gastroenteritis. She presented to the outside ED with complaints of increasing fatigue and dizziness. At that time her H/H was found to be 6.1/ 15.8, WBC 1.8 and platelets 208. Upon arrival to our ED, patient was febrile and her labs showed an H/H of 4.8/ 13.5, WBC 1.65 and platelets 161. Her parents denied a history of autoimmune disease in the patient. Patient denied joint pain, bone pain, diarrhea, rash or night sweats. Physical exam revealed tachycardia, splenomegaly and nontender anterior and posterior cervical adenopathy. Patient was started on antibiotics and monitored closely for sepsis. She had an extensive work-up to determine the cause of her pancytopenia. The patient was highly suspicious for MAS/HLH given her persistent fever, pancytopenia, and splenomegaly. Additional diagnostic criteria met by the patient are serum ferritin of 1404.6 and low NK cell activity. The patient's bone marrow biopsy showed no evidence of hemophagocytosis, however she met 5/8 of the diagnostic criteria for MAS/HLH. Interestingly, the patient's Parvovirus B19 antibody titer showed high levels of IgM antibodies but was negative for IgG. She improved greatly on her own and did not require treatment with steroids or chemotherapy agents. At discharge she was afebrile, had an H/H of 8.3/24.3, WBC 2.24 and platelets 123. She continues to be monitored weekly for recurrence of the disease but has shown improvement in her labs since discharge.

277 SUCCESSFUL ECMO SUPPORT FOR HYPERTROPHIC DISEASE IN AN INFANT OF A DIABETIC MOTHER

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Case Report Infants of diabetic mothers are at risk for transient hypertrophic cardiomyopathy secondary to fetal hyperinsulinemia. Hyperinsulinemia triggers hypertrophy and hyperplasia of myocardial cells by increasing fat and protein synthesis. Classically, there is asymmetric hypertrophy of the interventricular septum that may lead to left ventricular outflow tract (LVOT) obstruction. Neonates are usually asymptomatic, but 5–10% of infants develop poor

cardiac output. Spontaneous regression of hypertrophy occurs as plasma insulin concentrations normalize within the first months to year of life. Limited literature exists about use of extracorporeal membrane oxygenation (ECMO) as a supportive therapy for patients with poor cardiac output until LVOT obstruction improves. A 4 kg male was born via emergent C-section secondary to poor biophysical profile at 37 weeks gestation to a 32 year old G2P1 mother with insulin dependent diabetes. Maternal medications included metformin and insulin; hemoglobin A1C unknown. Apgars were 1, 5, and 8 at birth. Baby required intubation for persistent hypoxia and developed worsening hypotension. Echocardiogram revealed an underfilled, hyperdynamic but severely hypertrophied left ventricle with dynamic outflow tract obstruction and severe right ventricular hypertrophy. On day of life one, aggressive fluid resuscitation and inotropic support were initiated, but progressive anasarca, lactic acidosis, and worsening end organ damage ensued due to low cardiac output from severe LVOT obstruction. On day of life two, he was placed on veno-arterial ECMO. Infectious and genetics evaluation, including Pompe disease, were negative. Serial echocardiograms showed improvement of ventricular hypertrophy and decreased LVOT obstruction, and he successfully weaned off ECMO after seven days. He was managed with beta blockade and milrinone infusions until able to transition to oral heart failure medications. At one month of age, echocardiogram normalized, and he was discharged home. Neonatal hypertrophic cardiomyopathy secondary to maternal diabetes improves over the course of weeks to months after birth without intervention. In the setting of severe ventricular hypertrophy and LVOT obstruction, ECMO can be utilized to resolve end organ damage and support cardiac output until ventricular hypertrophy improves.

278 BUDD-CHIARI SYNDROME IN A PREVIOUSLY HEALTHY ADOLESCENT: A CLASSIC PRESENTATION OF A RARE PEDIATRIC CONDITION

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10.1136/jim-2015-000035.277

Case Report Budd-Chiari Syndrome (BCS) is a rare disease caused by obstruction to hepatic venous outflow, and is particularly rare in the pediatric population. Hepatic venous outflow tract obstruction leads to upstream sinusoidal congestion and portal hypertension, independent of mechanism or anatomic level of obstruction. While cases of BCS in the pediatric population have been reported, it remains rare. We report a case of an adolescent female with idiopathic BCS. A previously healthy 17-year-old female presented with a 6-day history of abdominal pain and distension with associated dyspnea and fatigue. She was found to have massive transudative ascites that re-accumulated within hours of paracentesis. Liver Doppler ultrasound showed no flow within the hepatic veins, ascites and splenomegally consistent with BCS. Contrast-enhanced abdominal computed tomography (CT) revealed intrahepatic narrowing of the inferior vena cava along with non-opacification of the hepatic veins, indicative of thrombus. Hospitalization was complicated by severe hypoalbuminemia, minimal elevations in transaminases and normal bilirubin. Heparin infusion was started and the patient was transitioned to enoxaparin injection. Patient underwent transjugular intrahepatic portosystemic shunt (TIPS) procedure, which was complicated by development of a biloma and biliary duct damage requiring stent placement which then had recurrence of thrombus. She is currently awaiting liver transplant. The patient had no known risk factors for BCS. Extensive hypercoagulability work-up was unremarkable. No underlying etiology for BCS has been determined for this patient. Nearly all cases of BCS present with abdominal pain, ascites and hepatomegaly. Diagnosis can typically be made using liver Doppler ultrasound, which has good sensitivity and specificity. Contrast CT is useful to better delineate hepatic structure if considering TIPS. BCS is characterized by high serum-ascites albumin gradient indicative of transudative ascites. Severe hypoalbuminemia is common. Elevations in AST, ALT, and bilirubin are variable depending on acuity of disease. For severe symptomatic ascites, repeat large-volume therapeutic paracentesis is required, as with our patient. Given its rarity in pediatric patients, diagnosis of BCS requires a high index of suspicion.

279 RIGHT SIDED INFECTIVE ENDOCARDITIS IN A PATIENT WITH A STRUCTURALLY NORMAL HEART: A CASE REPORT

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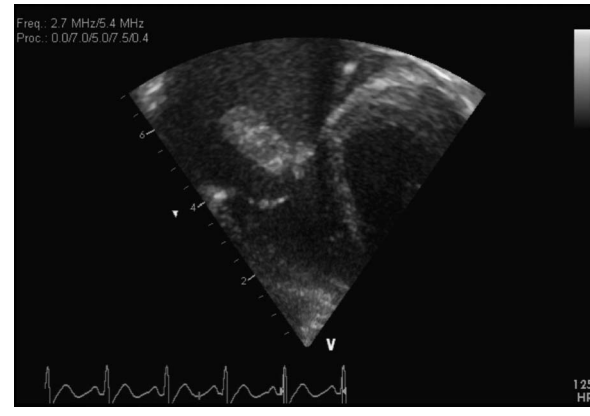
10.1136/jim-2015-000035.278

Case Report A six-year old with no past medical history presented with fever, unilateral foot erythema, cough and right sided chest pain. Echocardiogram showed a structurally normal heart with a large tricuspid valve vegetation. Blood cultures grew methicillin resistant *Staphylococcus aureus* (MRSA). Despite antibiotic therapy, the vegetation grew and required surgical resection. He responded well and had no residual complications.



Abstract 279 Figure 1

280 *MYCOPLASMA*-INDUCED RASH AND MUCOSITIS

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10.1136/jim-2015-000035.279

Case Report Our patient is a 7 year old boy who presented to the ER with severe lip swelling and blisters, cough, nasal congestion and room air hypoxia. Onset of illness was one week prior and involved only respiratory symptoms. He failed cetirizine, albuterol and oral steroid treatment. On the seventh day of illness, he developed post-tussive emesis, lip swelling and lip blisters. Work up revealed a normal CBC, electrolytes and chest x-ray. He was admitted for respiratory support due to mild room air hypoxia, and subsequently transferred to our hospital for further care. On exam, there is conjunctival injection bilaterally. Lips are erythematous and swollen with large, fluid-filled blisters and superficial skin sloughing. Lungs are clear to auscultation. Skin exam reveals a maculopapular rash to bilateral inner thighs. Oral mucositis and conjunctivitis worsened significantly during the first several days of hospitalization, and he developed erythema surrounding the urethral meatus. Further work up reveals extensive perihilar interstitial prominence on CXR. Respiratory PCR panel was negative; however, *Mycoplasma pneumoniae* IgM and IgG were markedly elevated. Thus, the diagnosis of *Mycoplasma*-induced rash and mucositis was made. During his ten-day hospitalization, he required nutritional support as well as aggressive wound care and pain control. By the time of discharge, oral mucositis, conjunctivitis and penile erythema had almost completely resolved.
Discussion *Mycoplasma pneumoniae* is known to cause a number of extrapulmonary manifestations, the dermatologic system being most severely affected in our patient. This condition has previously been described as erythema multiforme or Stevens-Johnson syndrome. The nomenclature "*Mycoplasma*-induced rash and mucositis" has been proposed by the American Academy of Dermatology this year. This appears to be a unique disease entity, largely sparing the skin and carrying a better prognosis than EM or SJS.
Conclusion In a patient presenting with severe mucositis followed by a respiratory prodrome, consider *Mycoplasma pneumoniae* infection as a possible etiologic agent. Although aggressive symptomatic therapy is needed, in addition to treating the underlying infection, MIRM carries a good prognosis; and patients often can expect a full recovery.

281 CARDIO-ANKLE VASCULAR INDEX AS A NON-INVASIVE SCREENER FOR A LIPID PANEL AND LEFT VENTRICULAR HYPERTROPHY IN CHILDREN

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10.1136/jim-2015-000035.280

Purpose of Study Risk factors associated with future cardiovascular disease, including hypertension, dyslipidemias, and obesity, are becoming increasingly prevalent in children. Therefore, noninvasive methods of assessing atherosclerotic risk in youth need to be developed and standardized. Cardio-ankle vascular index (CAVI) reflects the stiffness of large and small conduit arteries and is independent of blood pressure. Higher CAVI values reflect stiffer arteries. There are limited CAVI data in children. We Hypothesize that CAVI scores have a positive correlation with established invasive markers of subclinical atherosclerosis.They also have a positive correlation with elevated blood pressure and left ventricular mass by echocardiogram.
Methods Used Eighty-four consecutive children who had CAVI measured and either an echocardiogram or a lipid panel were included in the study. Three groups were compared: hypertensive (>95th percentile for age and height) vs non-hypertensive, elevated LDL(>130 mg/dl) vs normal LDL and left ventricular hypertrophy vs normal left ventricular mass index(LVMI<103 gm/m2).
Summary of Results Of the 84 subjects, 42 were hypertensive (mean CAVI: 5.2, SD=1.09) and 42 were non-hypertensive(mean4.9, SD=0.86) with no significant difference(p=0.56) between the CAVI scores. CAVI scores were greater in children with higher LVMI (n=23, mean: 6, SD=0.51, p=0.005) and LDL(n=36, mean6.1, SD=0.43) than those with normal LVMI (n=26, mean:4.9, SD=0.74) and LDL(n=40, mean4.8, SD=0.36, p=0.01)
Conclusions CAVI scores were non-significantly higher in hypertensive children. However, there was a significant positive correlation of CAVI scores with LVMI and LDL cholesterol which may indicate early vascular changes. CAVI may be a useful non-invasive surrogate marker for cardiovascular risk in the armament of the preventive pediatrician.

282 EVALUATION OF CARDIAC FUNCTIONS IN NEONATES WITH HYPOXIC ENCEPHALOPATHY WHO UNDERGO THERAPEUTIC HYPOTHERMIA

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10.1136/jim-2015-000035.281

Purpose of Study To assess changes in cardiac functions during therapeutic hypothermia in neonates with hypoxic encephalopathy by echocardiographic measurements.
Methods Used Retrospective chart review. Case series of 21 neonates who received therapeutic hypothermia per hypoxic ischemic encephalopathy protocol in NICU at Sacred Heart Hospital, Pensacola, FL. Outcome measures for cardiac functions were: shortening fraction (SF), ejection fraction (EF), left ventricular end diastolic diameter (LVEDD). One sample t-test was used to compare results to normal values for age and gestation from literature. Dependent variables to predict poor cardiac functions and outcome were: Highest troponin I level, initial oxygen saturation, initial lactate level, 1 minute APGAR score. We looked at the correlation between dependent variables and echocardiographic measures by using Pearson correlation coefficient.
Summary of Results 1) The mean SF and EF were significantly above lowest normal value. 2) 24–29% of patients had abnormally low SF and EF. 3) LVEDD correlated inversely with mean of highest troponin I level (r= - 0.465, p= 0.034). 4) EF correlated with initial oxygen saturation (r= 0.455, p=0.044). 5) Highest troponin I level correlated with lactate level (r= 0.531, p=0.013). 6) SF and EF were not

Abstract 282 Table 1 One sample t-test for ECHO results

	% of patients with low abnormal	Mean value	Lowest normal value	p-value
SF	23.8	36.48 %	28 %	
EF	28.6	67.71 %	58 %	
LVEDD	38.1	1.66 cm	1.67 cm	

statistically associated with APGAR scores, initial lactate, highest troponin I level.

Conclusions Cardiac output was within normal range in the majority of patients with hypoxic encephalopathy who were treated with therapeutic hypothermia. Poor cardiac functions in 24–29 % of cases were attributable to asphyxia based on correlations between echocardiographic measures and other dependent variables which are predictors of cardiac function and outcome. Therapeutic hypothermia didn't adversely affect cardiac functions.

283 ACCELERATED STRUCTURAL DEGENERATION OF THE PERIMOUNT MAGNA PERICARDIAL BIOPROSTHESIS IN CHILDREN: A REPORT OF 2 RECENT CASES

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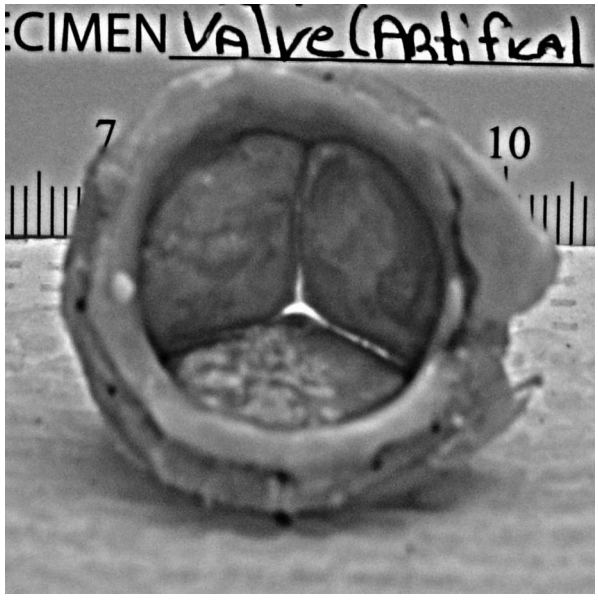
10.1136/jim-2015-000035.282

Case Report Experience with pericardial bioprostheses in young patients is limited. Accelerated degeneration of the Mitroflow valve has recently been reported. We report early accelerated structural valve degeneration with the Perimount Magna bioprosthesis which has not been previously reported, due to its anti-mineralization properties. Young patients with the Magna bioprosthesis are at high risk for rapid progression to severe stenosis, underscoring their need for more vigilant surveillance. The benefits and risks of these bioprosthetic valves must be weighed carefully when discussing options for replacement in this young cohort of patients.Careful patient selection is paramount and focused research on bioprosthesis in this age group is necessary, as they cannot be merely treated as small adults. Factors such as rapid growth phases and chemical changes during puberty, as well as possible pre-exisiting connective tissue disease substrates may be hypothesized in this cohort of patients.



Abstract 283 Figure 1 Frozen Magna Valve

Perinatal Medicine
Joint Plenary Poster Session and Reception 4:00 PM
Thursday, February 18, 2016

284 EFFECTS OF INDOMETHACIN, HYDROCORTISONE AND TNF ON PROSTAGLANDIN/EGF PATHWAY IN EXPLANTED FETAL BABOON EPITHELIUM

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10.1136/jim-2015-000035.283

Purpose of Study The concomitant use of indomethacin and hydrocortisone increases the risk for spontaneous intestinal perforation in premature infants. In prior studies; prematurity results in decreased quantities of Epithelial Growth Factor (EGFR) and function of the EGF receptor (EGFR) contributing to inadequate abundance of intestinal cells. The purpose is to test the hypothesis that dysregulation of the EGF pathway and downstream interactions with the prostaglandin pathway leads to impaired cell survival, mucosal thinning, and risk of perforation.

Methods Used Explanted baboon intestinal tissue from both term and preterm (67% gestation) baboons were exposed to pro-inflammatory agents TNF-alpha (10 ng/ml), and anti-inflammatory agents of indomethacin (50 uM) and hydrocortisone (50 ng/ml). Prostaglandin quantification (PGE2) and mRNA expression of EGF/EGFR were used as markers of EGF/R and PG/E-prostanoid (EP) pathway regulation.

Summary of Results Two preterm and two term baboons duodenal, jejunum, ileum and colon explants have been treated. Tissue has been processed for mRNA and PGE2 assays. Preliminary data shows a 30–50% reduction in PGE2 production in tissue exposed to anti-inflammatory agents. In contrast, a 150–250% fold up-regulation is found in tissue exposed to pro-inflammatory agents. Regional intestinal differences, with a higher production noted in the jejunum and ileum, in PGE2 production have been observed likely due to differences in sensitivity to the agents as well as variable regulatory mechanisms.

Conclusions A down regulation of the prostaglandin pathway when intestinal tissues from term and preterm baboons are exposed to anti-inflammatory agents may lead to depressed EGFR signaling suppressing the tissue's proliferative index and increasing risk of perforation. Currently experiments are underway to further assess these early findings.

285 LONGITUDINAL ANALYSIS OF HUMAN MILK PRODUCED BY MOTHERS OF VLBW'S

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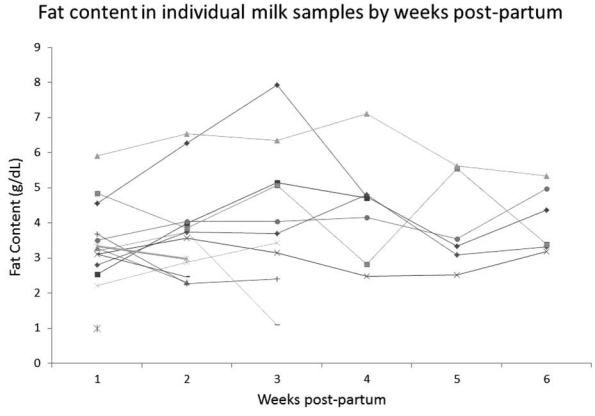
10.1136/jim-2015-000035.284

Purpose of Study To determine the degree of individual macronutrient variability over time.

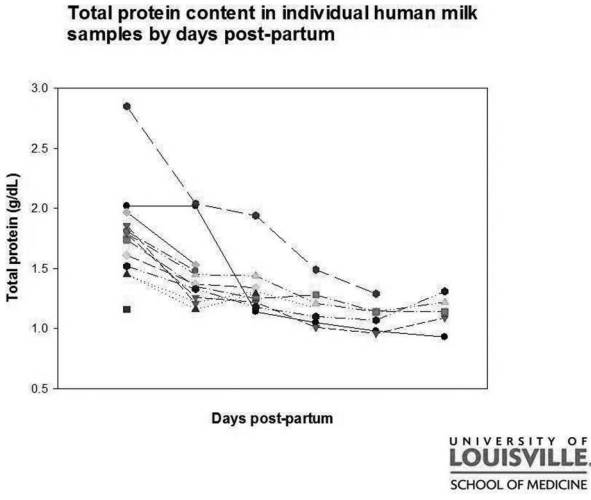
Methods Used This was a prospective, observational study of milk from women who delivered a very low birth weight infant. A single sample (5–20 mL) was collected weekly for up to 6 weeks. Samples were refrigerated up to 48 hours after collection. Prior to analysis by mid-infrared spectroscopy, samples were mixed well and pre-heated at 40 degrees C.

Summary of Results See figure 1 and figure 2

Conclusions The milk composition of each individual mother was dynamic and inconsistent throughout the stages of lactation. The majority of energy samples were less than 20 kcal/oz. Protein industry standard of 1.5 g/dL which is used to design fortifiers was not consistently found throughout lactation.



Abstract 285 Figure 1



Abstract 285 Figure 2

286 EFFECT OF FETAL PLACENTAL INSUFFICIENCY ON OUTCOMES OF ELBW INFANTS

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10.1136/jim-2015-000035.285

Purpose of Study We aimed to assess if the presence of fetal placental insufficiency (FPI), intrauterine growth restriction (IUGR) or both in a high risk setting of extremely low birth weight (ELBW) had any effect on the feeding outcomes, growth, major neonatal morbidities and mortality of these infants.

Methods Used We conducted a 5 year retrospective observational study. Data was collected on all ELBW infants born in two Level 3 neonatal intensive care units (NICU) in Texas- UTHSC, San Antonio and UTMB, Galveston from January 2010 to December 2014. Infants who did not survive the 1st week of life or were born with major congenital anomalies were excluded. FPI was defined by the presence of absent or reversed end diastolic flow on prenatal Doppler. ELBW infants with both IUGR and FPI were compared those with IUGR in the absence of FPI and appropriate for gestational age (AGA) ELBW infants.

Summary of Results In all 117 ELBW infants were included in the study. Of these 23 belonged to the group 'IUGR with FPI', 35 to 'IUGR without FPI' and 59 to the 'AGA ELBW' group. IUGR infants with FPI consumed smaller enteral feeding volumes at 4 weeks of life (53.3 ±47.9 vs 87.0±41.4 kcal/kg/day, $p<0.05$) and at 36 weeks corrected gestational age (80.5±52.0 vs 106.8±49.0 kcal/kg/day). These infants also required longer duration of parentral nutrition (46.2±34.2 vs 27.8±21.4 days, $p<0.05$). Despite slower initial growth, IUGR infants with FPI surpassed the growth velocities of infants without FPI by first month of life. Higher gestational age of infants with IUGR and FPI had a protective effect against BPD .

Conclusions ELBW infants with FPI consume smaller feeding volumes and require parentral nutrition for longer duration. Despite slower initial growth velocities, they eventually show good catch up growth. Higher gestational age of IUGR infants with FPI has a protective effect on the incidence of BPD. FPI does not increase the risk of other neonatal morbidities and mortality in ELBW infants.

Abstract 286 Table 1 NEONATAL OUTCOMES

OUTCOME	IUGR+FPI +ELBW n=23	IUGR-FPI +ELBW n=35	AGA+ELBW n=59
Day 28 enteral, Kcal/Kg/day	53.3±47.9*	87.0±41.4	86.2±49.6 †
36 week enteral, Kcal/Kg/day	80.0±52.0	106.8±49.0	111.3±29.8 †
TPN days	46.2±34.2*	46.2±34.2*	29.3±28.5 †
BPD, n(%)	7(30)	21(60)	35(59)

*p<0.05 IUGR+FPI vs IUGR-FPI; †p<0.05 IUGR+FPI vs AGA+ELBW

287 FATAL REPTILE-ASSOCIATED SALMONELLA MONSCHAUI SEPSIS IN THE NEONATAL INTENSIVE CARE UNIT

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10.1136/jim-2015-000035.286

Case Report Nontyphoidal Salmonella species are virulent zoonotic organisms that can be directly or indirectly transmitted to humans via the fecal oral route. It is most often acquired from the feces of reptiles, chicks and ducklings. Although Salmonellosis is not common in the neonatal intensive care unit (NICU), immunological insufficiency of the preterm infant increases vulnerability. We present a case of a 29 4/7 week gestation female infant who succumbed to infection with the rare species, Salmonella monschaui. Our patient was the first live-born infant of a 35 year old G3P0020 mother. She was delivered via urgent cesarean section due to severe preeclampsia weighing 1,390 grams. The initial hospital course was benign. She had been transferred to the neonatal step-down unit to facilitate parental rooming-in prior to discharge, when on day of life 32, she developed acute desaturations, tachypnea, tachycardia, distended abdomen and lethargy. She underwent a sepsis evaluation and was started on empiric antibiotics. Over the next 48 hours, she acutely decompensated requiring aggressive resuscitation and vasopressor support. At 24 hours the blood culture grew Salmonella species. Upon further history, the infants' parents reported having three pet bearded dragons who roamed their home freely. They further acknowledged that while in the NICU, they had strictly adhered to the hand-washing procedure required upon entry to the unit, however, in the more relaxed culture and design of the step-down unit they had become less meticulous. On day of life 35, the infant developed new multifocal intraparenchymal hemorrhages. She continued to have progressive respiratory and hemodynamic failure unresponsive to interventions. The parents and medical team decided to enact comfort care measures, allowing a natural death. Our case illustrates a preventable case of fatal neonatal nontyphoidal Salmonella bacteremia as the parents were identified as the most likely vectors of infection. This emphasizes the need for parent education and standardized handwashing protocols at all levels of neonatal care.

288 STORAGE OF HUMAN AMNIOTIC FLUID DOES NOT AFFECT IT'S BIOACTIVITY

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10.1136/jim-2015-000035.287

Purpose of Study Amniotic fluid (AF) contains trophic factos (TF's) which aid in the development & maturation of gastrointestinal tract. In premature neonates, AF swallowing is limited.This increases the risk of necrotizing enterocolitis (NEC). Studies have shown that oral supplementation of AF during the first week of life may decrease NEC by providing AF borne TF. We investigated if storage of AF deteriorates it's biological activity.

Abstract 288 Table 1 Measurement of biochemical activity of TF's in AF samples

AF samples	Samples stored at 4°C	Samples frozen to - 20C°
EGF	190±26.6	165±22.96
HGF	8953±805	7997±671
TGF- α	7.73±0.28	7.78±0.6
Eotaxin	4.23±0.61	4.49±0.77
IL-6	88.72±24.46	110±21.6
IL-8	129.6±26.68	164.1±43.67
IL1ra	70±15.01	94.91±18.74
IP-10	1636±377	1996±561.2

Methods Used Sterile human AF (hAF) was collected during cesarean section from term pregnancies. AF was centrifuged and divided into 2 aliquots. One aliquot was maintained at 4^0C for 7 days and the other aliquot was immediately frozen to -20^0C. Biological activity of AF was measured by a) determining the biochemical availability of TF's (EGF, HGF, IGF-1 and TGF by Bio-Plex) and b) by *in vitro* proliferation, migration and lipopolysaccharide (LPS) induced IL-8 production by small intestinal epithelial cells (FHs74). *In vivo* preservation of biological activity of AF was monitored by gavage feeding AF to rat pups in a rat model of NEC and measuring LPS induced IL-8 production. Bacterial contamination was assessed by weekly cultures of AF for 4 weeks.

Summary of Results There was no statistically significant difference in biochemical activity of TF's as well as migration and proliferation of intestinal epithelial cells between the two samples of hAF used. LPS induced IL-8 production was reduced by hAF exposure and no difference in activity was noted between the two groups. No bacterial growth was observed in AF culture at 4 weeks

Conclusions hAF can be stored at 4^0C for at least 7 days without deterioration of the biological activity of TF'S's present in AF. hAF may be a good source of TF'S for preterm infants during first week of life to decrease and/or prevent NEC. Further *in vivo* studies are required before using hAF in preterm infants.

289 TRANSCUTANEOUS BILIRUBIN IN NEONATES DURING PHOTOTHERAPY.

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10.1136/jim-2015-000035.288

Purpose of Study Transcutaneous bilirubin (Tcb) measurement is a quick, reliable and painless modality in the management of hyperbilirubinemia. Due to bleaching of skin during phototherapy exposure, Tcb measurements is not reliable. We aim to evaluate the accuracy of Tcb from covered skin (Tcb-C) during phototherapy by comparison with simultaneous serum bilirubin (TSB) measurements.

Methods Used In this prospective study, we included 3 study groups: Term (≥ 37 weeks), preterm (30 – <37 weeks) and extremely preterm (<30 weeks) neonates with hyperbilirubinemia. Before starting phototherapy, a phototherapy opaque patch was applied either on the forehead

Abstract 289 Table 1 Comparison of serum and transcutaneous bilirubin values

Term (n=39)	24 Hr.	48 Hr.	72 Hr.	Mean	Difference in mean from seum bili
Serum Bili	11.4	11	11.3	11.2	0
Tcb-C	11.2	10.7	11.2	11	+ 0.2
Tcb-U	5.8	5.4	4.9	5.4	+ 5.8
Preterm (n=71)					
Serum Bili	9	8.2	7.7	8.3	0
Tcb-C	10.1	9	8.9	9.3	−1.0
Tcb-U	9.3	6.9	6.3	7.5	+ 0.8
Extremely Preterm (n=15)					
Serum Bili	3.8	3.3	2.8	3.3	0
Tcb-C	7.3	7	5.8	6.7	−3.4
TcB-U	3.6	3	2.2	2.9	+ 0.4

(term and preterm) or interscapular region (extremely premature). Tcb levels were measured from covered and uncovered areas every 24 hours and compared to TSB levels taken within 30 mins, while the neonate was receiving phototherapy. A difference $>\pm 1.0$ between serum bilirubin and Tcb-C/Tcb-U was considered statistically significant.

Summary of Results As shown in the table below, TSB co-relates well with Tcb-C in term and preterm infants. But Tcb-C did not correlate with TSB in extremely preterm infants.

Conclusions Tcb-C is a reliable measure of bilirubin in term and preterm infants. However, in extremely preterm neonates Tcb-C cannot be used for this purpose.

290 FACTORS ASSOCIATED WITH EARLY TERMINATION OF DELAYED CORD CLAMPING IN VERY LOW BIRTH WEIGHT INFANTS

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10.1136/jim-2015-000035.289

Purpose of Study Delayed cord clamping (DCC) results in improved outcomes in preterm infants. We evaluated the frequency of early termination of DCC before goal duration of 60 seconds, and associated factors in very low birth weight infants (VLBW,<1500 g) undergoing attempts at placental transfusion.

Methods Used We performed a retrospective observational cohort study of VLBW infants receiving DCC at a single center from 7/2013–7/2015. We evaluated the duration of placental transfusion and used logistic regression models to identify risk factors for early termination. We compared short term physiologic and clinical outcomes between infants receiving complete (60 seconds) versus early termination (< 60 seconds) of DCC.

Summary of Results A total of 89 VLBW infants received DCC. Mean (SD) duration of DCC among all infants was 52 (13) seconds. Twenty-four percent (95% CI 16–34%) of infants underwent early termination before 60 seconds, receiving a mean of 32 (7) seconds of DCC. Factors associated with early termination were a low 1 minute Apgar (OR 1.42 per 1 point decrease, 95% CI 1.14–1.76) and delivery by emergent caesarean (OR 30.0, 2.93–307.0), compared to planned cesarean (OR 1.34, 95% CI 0.42–4.32) and vaginal delivery (reference). There was no association with early termination and birthweight ($p=0.16$), gestational age ($p=0.27$) or small for gestational age ($p=0.07$). Infants with early termination had a higher initial blood glucose but lower mean blood pressure compared to complete DCC infants. We found no differences in hematocrit, pH, pCO2, FiO2, and temperature between groups upon admission to the neonatal intensive care unit. In addition, we detected no difference in mortality between groups.

Conclusions In this study, the majority of infants in whom DCC was attempted received 60 seconds of placental transfusion. However, one-fourth of infants in our study required early termination and alternative strategies, particularly for infants delivered by emergent cesarean, may be necessary to increase the success rates of placental transfusion.

291 COMPARING DIAGNOSTIC CRITERIA FOR BRONCHOPULMONARY DYSPLASIA (BPD) OF VERMONT OXFORD NETWORK (VON) TO THE NATIONAL INSTITUTE OF CHILD HEALTH AND DEVELOPMENT (NICHD) NEONATAL RESEARCH NETWORK

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10.1136/jim-2015-000035.290

Purpose of Study Incidence of BPD is used in neonatal centers as an index of quality of care. However there is no consensus as to standard definition of BPD. Major medical centers differ as to which classification to use. This study therefore aims to compare NICHD and VON criteria in an effort to help standardize the BPD criteria that can be used as a measure of care across major centers .

Methods Used We retrospectively reviewed medical records of infants born <30 weeks gestational age (GA). Infants with congenital anomalies, sepsis and hemodynamic instability were excluded. FiO2 requirement and mode of support were identified at 36 weeks PMA. Infants were classified as having BPD or no BPD based on NICHD and VON criteria. NICHD criteria further divided them into mild, moderate and severe BPD.

Summary of Results Records of 76 infants with mean GA and BW of 26 weeks and 946 grams respectively were reviewed. Prenatal factors identified were chorioamnionitis (12%) and PPROM (37%). 51 (67%) received complete antenatal steroid course. Delivery was via CS on 60 (79%) infants and median APGAR scores were 4 and 6 at 1 and 5 minutes respectively. Initial dose of surfactant was given at delivery in 74 (97%) infants. 10 (13%) were IUGR at birth and the average length of stay were 85 days. Out of 76 infants, 29 (38%) were identified as BPD by VON while 55

(72%) where by NICHD (mild 24%, moderate 4% and severe 73%). Out of the 55 BPD infants by NICHD, 26 of which (47%) were identified by VON as with NO BPD. The two criteria are significantly different via McNemar statistical analysis (P<0.0001).

Conclusions NICHD criteria identified more infants with BPD than VON classification. This indicate that both are not comparable hence cannot be uniformly used as quality of care indicator. These results support a need for standardized definition of BPD across centers.

292 OUTCOME OF INFANTS WITH SPONTANEOUS INTESTINAL PERFORATION

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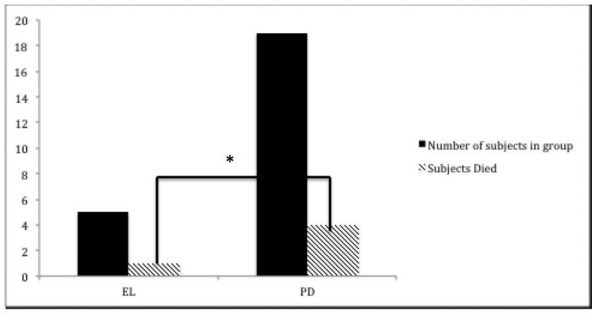
10.1136/jim-2015-000035.291

Purpose of Study Approximately 3% of extremely low birth weight infants (ELBW) develop spontaneous intestinal perforation (SIP). SIP is treated with either peritoneal drainage (PD) alone or PD followed by exploratory laparotomy (EL). We aim to compare the outcome of infants treated with PD or EL for SIP.

Methods Used In this retrospective chart review, after IRB approval, we collected data on infants with radiologic evidence of pneumoperitonium (January 2009-April 2015). Neonates treated with laparotomy initially or who developed NEC related intestinal perforation were excluded. EL group included infants with SIP treated initially with PD followed by laparotomy within 5 days of SIP. PD group included infants treated with PD only or who underwent laparotomy after 5 days of SIP. Pearson Correlation analysis was used.

Summary of Results 24 infants met inclusion criteria (21% EL group, 79% PD group). SNAPII & SNAPPEII scores were not significantly different in the 2 groups (**p-0.41&0.33**). 5 infants died (1 in EL group,4 in PD group). PD group had significantly higher mortality **(p<0.05)**(Fig). 18/24 developed PD related complications (Table). Infants in EL group had significantly lower PD related complications **(p 0.001).** Mean time to start/reach full enteral feeds, total TPN duration and total hospital stay was lower in the EL group compared to PD group (not statistically significant).

Conclusions Early Laparotomy within 5 days of SIP decreased PD related complications and mortality in infants with SIP.



* - p value < 0.05

Abstract 292 Figure 1 Number of subjects and relative mortality in EL and PD group

Abstract 292 Table 1 PD related complications in both groups

Group	Bowel obstruction	Perforation	Adhesion/ Strictures	Drain complications	Others
EL	0	1	0	0	1
PD	3	6	2	2	3

293 T-CELL PHENOTYPE IN BRONCHOPULMONARY DYSPLASIA

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10.1136/jim-2015-000035.292

Purpose of Study Bronchopulmonary dysplasia (BPD) is diagnosed in 25–35% of very low birth weight infants. It has a multifactorial etiology, but inflammation is an important contributor. The role of neutrophils and macrophages has been well studied; however data on the contribution of lymphocytes are lacking. We propose to investigate the role of T cell-mediated inflammation, specifically the tracheal aspirate (TA) T-cell phenotype. We hypothesize that T cells and their mediators, such as Granzyme B (GrB) and perforin, are critically involved in the development of BPD.

Methods Used We assessed the TAs of ventilated, preterm infants via flow cytometry, cytometric bead array, and enzyme-linked immunosorbent assay, specifically analyzing for T-cell subsets and their mediators. The target population is ventilated infants between 23 0/7 to 28 6/7 weeks gestational age. TA samples are collected on days of life 3 through 14, and then 2–3 times per week for the duration of intubation. Informed consent is obtained from all parents prior to enrollment. TA samples are collected during clinically indicated endotracheal tube suctioning by the bedside nurse or respiratory therapist. For each TA sample collected, cells and supernatant are separated by centrifugation, and cells are cryopreserved and stored in liquid nitrogen. Clinical data is collected on each enrolled patient to correlate with findings.

Summary of Results We are currently analyzing our laboratory results. Preliminary data from a smaller subset of patients studied by our group demonstrate that the mean percentage of TA live cells expressing GrB and perforin was correlated with more severe BPD. There was a significant positive correlation noted between total protein and percent of GrB positive cells, suggesting that T cell-mediated inflammation may be associated with increased lung injury. Positive correlations were also noted between total positive pressure respiratory support days and percentage of live TA cells with GrB and perforin in our preliminary data.

Conclusions We anticipate that our current sample data will support our preliminary data by indicating a correlation between TA T-cell phenotype and later, more severe, BPD. We also expect to find additional mediators reaching significance in this larger sample.

294 FREQUENCY AND CHARACTERISTICS OF INHALED NITRIC OXIDE USAGE IN VERY LOW BIRTH WEIGHT INFANTS IN A LEVEL 3 NEONATAL INTENSIVE CARE UNIT

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10.1136/jim-2015-000035.293

Purpose of Study The use of inhaled nitric oxide (iNO) in preterm infants remains controversial. In 2010, a NIH consensus conference cautioned against its use in preterm infants. Hence we conducted this retrospective study to determine the prevalence and characteristics of iNO use in VLBW infants in our level III NICU after these guidelines and to examine associations between iNO use and outcomes.

Methods Used A retrospective database review of all VLBW infants admitted to our level III NICU from Jan 2011 to Dec 2013 was conducted. iNO was used for hypoxemic respiratory failure as a rescue treatment. We evaluated the frequency of iNO use and compared the characteristics and outcomes between infants that received iNO with those that did not. Multivariate analysis controlling for gestational age and race was performed to study the effect of iNO on PDA requiring treatment, moderate to severe BPD, death and the combined outcome of moderate to severe BPD and/or death.

Summary of Results 512 VLBW infants were evaluated, of which 57 (11.1%) received iNO. Median duration of iNO use was 19 days. Table-1 shows comparison between the two groups with univariate analysis. Incidence of medically or surgically treated PDA, death, moderate to severe BPD and the combined outcome of death and/or moderate to severe BPD was significantly higher in the iNO group even after controlling for gestational age and race.

Conclusions iNO was used in about 10% of VLBW infants in our NICU and was associated with poor outcomes. We caution against its use in preterm infants.

Abstract 294 Table 1

	iNO group (n=57)	Control group (n= 455)	p value
Birth weight (mean, SD)	687, 240	958, 295	<0.001
Gestation (mean, SD)	25.5, 2	27.7, 2.7	<0.001
Afrian American race	96.4%	83.5%	<0.01
Male sex	54.4%	49%	NS
SGA status	33.3%	26.2%	NS
Antenatal Steroids	96.5%	92.1%	NS
5 minute APGAR<4	17.5%	12.1%	NS
Medically/surgically treated PDA	52.7%	19.1%	<0.001
BPD (O2 at 36 weeks)	61.5%	17.6%	<0.001
Death	22.8%	7.25%	<0.001
BPD or Death	74.3%	26.5%	<0.001

There was no difference in the incidence of ROP or NEC between the two groups

295 CORRELATION OF ABNORMAL LABS WITH SYMPTOMS AND LENGTH OF ANTIBIOTIC THERAPY IN NEONATES EXPOSED TO CHORIOAMNIONITIS

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10.1136/jim-2015-000035.294

Purpose of Study Infants born to mothers with chorioamnionitis (CAM) are at higher risk of developing early-onset sepsis. In 2012, AAP's COFN recommended prolonged antibiotics (Abx) in asymptomatic infants with sterile blood cultures, but abnormal labs (AL). In 2014, COFN clarified that abx can be discontinued by 72 h in this scenario. We studied late preterm and term neonates born to mothers with CAM and reviewed the incidence of AL and their correlation with symptoms and duration of abx.

Methods Used This is a retrospective study of neonates born to mothers with clinical CAM spanning 8 months. Individual charts were reviewed and data were collected on maternal and neonatal demographics, symptoms suggestive of sepsis (respiratory distress requiring support >1 h, fever, feeding difficulties, hypotension and acidosis), lab studies, duration of antibiotics and reasons for continuation of antibiotics beyond 72 hours. ALs were defined as CRP >1.8 mg/dl and/or I:T ratio >0.2.

Summary of Results 81 neonates born to mothers with clinical CAM were included. Mean BW was 3118 g and mean GA was 39 wk. Incidence of PROM (>18 hours), maternal GBS carriage and maternal UTI were 21%, 22% and 17% respectively. 28% of neonates had symptoms suggestive of infection; majority of these were respiratory distress (83%) followed by feeding difficulties (25%). None had positive blood cultures. AL were found in 52% of all infants; 45% of asymptomatic and 69% of symptomatic infants. Mean peak CRP level was higher (3.4 mg/dl) in symptomatic infants compared to asymptomatic infants (2.2 mg/dl) ($p< 0.05$). Median duration of abx was 90 h; longer in symptomatic vs asymptomatic neonates (110 vs 73 h) and those with AL vs without AL (107 h vs 63 h) ($p<0.05$). 55% of neonates received abx longer than 72 hours: 49% in asymptomatic infants and 68% in symptomatic infants. Reasons for abx treatment prolonged beyond 72 hours in asymptomatic neonates (n=29) was ALs (n=14), untreated GBS (n=1) and PROM (n=1). In 13 cases, no reason was documented for prolonged antibiotics.

Conclusions About half of asymptomatic neonates exposed to CAM had abnormal labs and were treated with a prolonged course of abx inspite of sterile blood cultures. Large prospective studies are needed to assess if abx can be safely discontinued in asymptomatic infants with sterile blood cultures and abnormal CBC or CRP.

296 RELATIONSHIP BETWEEN PULMONARY HYPERTENSION AND OUTCOMES AMONG INFANTS WITH BRONCHOPULMONARY DYSPLASIA WHO UNDERGO SURGERY

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10.1136/jim-2015-000035.295

Purpose of Study Pulmonary hypertension (PAH) increases the risk of mortality in pediatric and adult surgical patients. In preterm infants with bronchopulmonary dysplasia (BPD), PAH portends an increased odds of mortality. In preterm infants<30 weeks gestational age surviving to 36 weeks postmenstrual age, tracheostomy is an independent predictor of death or neurodevelopmental impairment. There is a gap of knowledge in how the outcome of preterm infants with BPD undergoing surgery is affected by PAH.

Methods Used In a retrospective cohort study, we analyzed a group of preterm infants with evolving BPD (per Parkland [PHHS] NICU database definition), born 2003–2012, who had tracheostomies performed at PHHS or Children's Medical Center Dallas (CMC) at >28 days. This was an IRB approved database extraction with subsequent chi-squared analysis. Currently, we are performing a retrospective cohort study analyzing two groups of patients: preterm infants born at PHHS NICU between 2001 and 2014, diagnosed with evolving BPD, who had surgeries performed at PHHS or CMC at >28 days; and preterm infants with severe BPD (per the Children's Hospitals Neonatology Consortium database definition) who were transferred to CMC for surgery between 2007 and 2014. We will analyze these patients to relate outcomes of mortality to the presence of PAH; in addition, we will analyze markers of cardiac and respiratory morbidity as they relate to PAH.

Summary of Results Preliminary data were extracted from the PHHS database among preterm infants with evolving BPD born 2003–2012 (n=451), two infants were excluded who received tracheostomy at <28 days of life. Of the remaining infants, 41 had PAH (per the PHHS NICU database definition), 408 did not have PAH. Of the 41 infants with PAH, 8 underwent tracheostomy at >28 days, with 4 deaths prior discharge (50%), and of the 408 infants without PAH, 15 underwent tracheostomy at >28 days, with 1 death prior to discharge (7%) (p= 0.033).

Conclusions Our preliminary data suggests that the mortality of preterm infants with evolving BPD undergoing tracheostomy is higher among those with PAH than those without PAH. However, a larger sample size is needed for adequate power; therefore, we plan to expand our cohort as described above.

297 POSTNATAL HYDROCORTISONE VERSUS DUCTAL LIGATION FOR CHRONICALLY VENTILATOR DEPENDENT EXTREMELY LOW BIRTH WEIGHT INFANTS WITH PERSISTENT HEMODYNAMICALLY SIGNIFICANT PATENT DUCTUS ARTERIOSUS

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Purpose of Study Among extremely low birth weight infants (ELBW), pulmonary inflammation and pulmonary edema resulting from persistent hemodynamically significant patent ductus arteriosus (HDSPDA) are two major lung pathologies responsible for prolonged need for ventilation. For chronically ventilator dependent ELBW infants with persistent HDSPDA (failed pharmacological closure), initial management strategy either conservative approach with postnatal steroid (ameliorates lung inflammation) or aggressive approach with surgical ligation of HDSPDA (ameliorates pulmonary edema) to achieve favorable neonatal outcomes is still controversial.

Abstract 297 Table 1 Adjusted ORs for neonatal outcomes with initial postnatal hydrocortisone use over surgical ligation of PDA

Death or BPD	2.4 (0.6 - 9.7)	0.23
Need for ventilation at 36 weeks postconceptional age	0.6 (0.1 – 4.0)	0.60

Methods Used In this retrospective study, ELBW infants born between 2009 and 2013 at≤27 weeks gestational age with continued need for mechanical ventilation beyond 14 days after birth and with evidence of persistent HDSPDA (ECHO score≥4) were included. Based on the type of initial intervention received, infants were categorized into hydrocortisone group or ductal ligation group. Baseline clinical-demographic variables and short term neonatal outcomes were compared between two groups.

Summary of Results Out of 85 infants who met inclusion criteria, 43 infants received initial treatment with hydrocortisone, 42 infants received initial treatment with ductal ligation. In comparison to infants managed with initial surgical ligation, infants managed with initial hydrocortisone treatment had lower ductal ligation rate during hospital stay (12% vs 100%, p=<0.01), but longer median duration of exposure to persistent PDA (53 vs 22 days, p<0.01). Median time to extubation (10 vs 8 days, p=0.4), neonatal mortality (aOR 2.94, 95% CI 0.25 - 34.4) and other (Table) short term major neonatal morbidities were similar between two intervention groups.

Conclusions Use of postnatal hydrocortisone as an initial intervention for ELBW ventilator dependent infants with persistent HDSPDA reduces subsequent need for surgical ligation without affecting neonatal mortality and major short term neonatal morbidities.

298 PARENTAL PERCEPTION OF NOISE IN AN OPEN BAY LEVEL IV NICU: AN OPPORTUNITY FOR ENGAGEMENT

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Purpose of Study Noise is a developmental hazard for premature and critically ill neonates. Preterm infants in the neonatal intensive care unit (NICU) are constantly exposed to ambient sounds that often exceed recommended levels. Parental perception of noise in the NICU and its impact on neonatal development is yet to be studied. We hypothesized that sound levels in our NICU exceed recommended levels and parents are bothered by noise in our NICU but are unaware of its impact on neonatal development.

Methods Used Anonymous surveys were distributed to all the physicians, nurses and staff in the NICU as well as

consulting services. This was completed over a 3-week period. All parents who had a baby in the NICU during the same time period were offered a paper version of this anonymous survey. Following the survey period, a noise-meter was installed in 3 locations in the NICU and sound data collected over a 23-day period. During this 23-day period, a random sample of parents were surveyed using the same tool used in the initial survey.

Summary of Results Each noise meter gathered 32458 noise measurements per location. In all locations the sound levels exceeded recommended levels for the entire duration of the data collection. The majority of parent survey participants 57 (95%) were female, 40 (67%) visited the NICU daily and one third spent 4–8 hrs/day in the NICU. Of the 109 staff surveyed, 88 (81%) were female, and majority identified as nurse, 52 (49%). 64% of parents did not perceive noise as a problem in the NICU while 82% of staff acknowledged noise as a problem. This trend is consistent for all questions examining parental perception of noise and its impact on neonatal outcome, p-values for differences were <0.001. Parents showed no difference in responses before and after installation of the noise meter, all $p>0.2$.

Conclusions In this level IV open bay NICU, parental perception of noise significantly differs from staff perception of noise. Parents did not perceive the sounds as noise and were unbothered by the noise in contrast to our hypothesis. The developmental impact of noise is not appreciated by this cohort of parents. Parental education on the impact of a noisy care environment should be a goal during the NICU stay. This will engage parents as partners in mitigating noise in the NICU care environment

299 GOLDEN HOUR PROTOCOL IMPROVES QUALITY AND EFFICIENCY OF CARE IN EXTREMELY LOW BIRTH WEIGHT INFANTS

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Purpose of Study Interventions during the first hour of life, such as appropriate resuscitation, gentle ventilation strategies, and efficient admission processes, may help improve neonatal outcomes. Our multidisciplinary tiny baby workgroup initiated the golden hour protocol (GHP) as a quality improvement project. The GHP implemented evidence-based standardized processes and identified pre-specified team member roles from pre-delivery management through the first hour of life for extremely low birth weight (ELBW) infants. Our aim was to decrease the time taken for umbilical catheter placement (UCP) and initiate TPN to less than 1 hour after birth. GHP was implemented in Jan 2015 for 1 year study period.

Methods Used The workgroup standardized resuscitation and admission processes for ELBW infants (GA<28 weeks, birth weight≤1000 grams) in a level IV, 70 bed NICU. Baseline data was collected (interim analysis period Jan 2015 - July 2015). We compared outcome measures such as: time to first blood gas, time to first X-ray for UCP verification, patient temperature after the UCP and time to initiation of TPN before and after GHP implementation (n=40). In addition, we assessed impact of GHP on the incidence of severe intraventricular hemorrhage (IVH).

Summary of Results Gestational age and birth weight were similar between the groups. After implementing the GHP, the time to first x-ray for UCP verification decreased significantly (median [interquartile range] 82 min [67.5–103.5] vs 103 min [83–132]; $p<0.05$); the incidence of severe IVH also decreased significantly (0.2 vs 0.5 $p=0.03$) and the temperature after UCP improved significantly (97.4 [96.5–98.3] vs 98.1 [97.6–98.5]; $p=0.02$). In addition, the time to first blood gas analysis decreased by 19 minutes (66 min [61–90.5] vs 85 min [53–109]; $p=0.15$) and the time to TPN initiation decreased (75 min [66.5–93] vs 90 min [60.5–140]; $p=0.12$).

Conclusions Implementation of a standardized approach to the care of ELBW neonates during the first hour of life shows a shorter time to completion of crucial interventions and a better control in temperature which could improve neonatal outcomes. We will evaluate the outcomes at the end of the study period.

300 HYBRID FORM OF TELEMEDICINE: A UNIQUE WAY TO PROVIDE SERVICE IN LEVEL II NICUS

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Purpose of Study Hybrid telemedicine system consisting of 24/7 NNP staffing with a neonatologist physically present 3 days a week and using a high definition camera the remaining 4 days for examination and communication with staff and parents was recently implemented at Comanche County Memorial Hospital (CCMH).Our aim is to assess outcomes of treatment for moderately ill infants of 32–35 weeks gestational age (GA) managed by hybrid telemedicine system in this local Level II NICU compared to conventional management provided to similar population in a large referral Level IV NICU at OU Medical Center (OUMC).

Methods Used Retrospective non-inferiority study comparing outcomes of premature infants admitted either to the CCMH or OUMC. All 32–35 weeks GA infants admitted between July 2013 to June, 2015 were included. OUMC infants were all transported from areas geographically comparable to CCMH. Infants requiring mechanical ventilation>24 hours or advanced subspecialty services were excluded. Registered variables were: length of stay, type and duration of respiratory support, length of antibiotic therapy, and time to full enteral feedings. Between group comparisons were performed using statistical tests appropriate for the type of data analyzed, with the SAS Statistical Software (V9.3).

Summary of Results Eighty seven neonates at CCMH and 56 neonates at OUMC were included in the analysis. Compared to OUMC, neonates at CCMH had significantly shorter hospital stay, reached full enteral feeds sooner, had fewer total days of supplemental oxygen, and fewer days on non invasive ventilation support. (Figure)

Conclusions Hybrid Telemedicine system is a safe and cost-effective strategy that may be used in extending intensive care to neonates in medically underserved areas.

301 IMPACT OF PRENATAL ANXIETY & DEPRESSION ON INFANT ENGAGEMENT

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Purpose of Study This study examined the impact of prenatal anxiety and depression on infant social engagement with 48 mothers and their infants, 58% African American and 42% non-African American.

Methods Used Prenatal anxiety and depression were assessed using the Rini Pregnancy Related Anxiety Scale (Rini et al., 1999) and Edinburgh Depression Scale (EDS) (Cox et al., 1987), respectively. Using the MACY infant-parent coding system (Earls et al., 2009), infant social engagement with their mothers was measured at 4--months-old during the still face epoch of the Still-Face Paradigm (Tronick et al., 1978). Infant positive engagement behaviors and solicitation of their mothers during this paradigm are predictive of later parent-child attachment (e.g., Jamieson, 2004; Fuertes et al., 2006).

Summary of Results In a linear model of the overall sample controlling for maternal age, race, child sex, and including an interaction between Rini score and race, higher Rini scores predicted decreases in infant social engagement (β=-.103, p=.014). The interaction between Rini scores and race was significant (β=.250, p=.033). To examine further, individual regression of Rini scores predicting infant engagement were run within races. In non-African-Americans, Rini scores did not predict infant engagement. In African Americans, Rini scores did predict decreases in infant engagement. In a linear model of the overall sample controlling for maternal age, race, child sex, and including an interaction between severity of depression and race, elevated depression severity predicted lower infant engagement (β=-1.385, p=.046). An interaction between depression severity and race emerged at a trend level (β=2.20, p=0.093). For African Americans, depression severity predicted decreases in infant engagement (β=-1.446, p=.040). In non-African Americans, no significant relationship emerged. No significant interactions emerged between severity of depression and anxiety scores predicting infant engagement.

Conclusions Higher levels of prenatal anxiety and depression were associated with decreases in infant social engagment only within African American mother-child dyads. We plan to investigate the potential mechanisms that contribute to the differential impact that prenatal anxiety and depression have on African American mother-infant dyads.

302 RESOURCE UTILIZATION AND NEURODEVELOPMENTAL OUTCOMES IN A COHORT OF INFANTS WITH INTESTINAL FAILURE

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Purpose of Study While there are studies describing poor neurodevelopmental impairment (NDI) in infants treated for necrotizing enterocolitis (NEC), there are limited studies describing neurodevelopmental (ND) outcomes or needs in the high-risk subgroup of infants with intestinal failure (IF) associated with various gastrointestinal (GI) diseases of the newborn. The purpose of this study is to describe medical and educational resource utilization and ND outcomes in a cohort of infants with IF based on the need for rehabilitation services.

Methods Used A prospective, single center, descriptive study, using data from the electronic medical record system used at Children's Healthcare of Atlanta (CHOA) at Egleston, the Developmental Progress Clinic database and data collected by parent interview, Ages and Stages Questionnaire, 3rd Edition (ASQ-3), and physical examination.

Summary of Results 34 children who are at least 12 months adjusted age during our study period will be evaluated. The mean gestational age was 33 weeks and the median gestational age was 34 weeks. Fifty six percent were male, of whom 52% were black, 44% were white and 3% were Asian. The most common GI diagnoses were NEC (44%), intestinal atresia (14%), gastroschisis (26%), volvulus (6%) and Hirschsprung (6%). Data collection is ongoing. We will evaluate neonatal morbidities, lab, surgical and growth data. Each child will have a standardized neurosensory exam to identify evidence of neurologic injury or cerebral palsy. ND outcomes based on results of the ASQ-3 will be evaluated. Results will be reported based on age adjusted percentiles. Resource utilization will be documented including the need for rehabilitation therapy services or special needs preschool services. Of the 34, 13 have been evaluated. Twelve of the 13 (92%) have had at least one abnormality on exam. According to the developmental screening, 3 scored in the above normal (23%), 4 scored in the intermediate (31%), 6 scored in the below normal (46%) categories, respectively.

Conclusions This is a high risk population. There is a paucity of data ND outcomes of patients with intestinal failure.

303 1 MONTH OLD INFANT WITH CARDIORESPIRATORY ARREST

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10.1136/jim-2015-000035.302

Case Report A 1 month-old male infant presents to an emergency center with a 1 day history of lethargy and poor feeding. He was born at term by normal vaginal delivery with a B.wt of 4250 g. He had two normal newborn screens. Vital signs: Normal. Weight: 5680 g. Blood chemistries, CBC with differential, liver function and cerebral spinal fluid indices are normal. CT head is also normal. Antibiotics are administered intravenously. En route to a tertiary care hospital, he develops bradycardia with desaturation and receives CPR for 2 minutes. He is intubated after receiving lorazepam and succinylcholine. Upon arrival to the NICU, examination findings are remarkable for: equal, round and sluggishly reactive pupils, absent gag, corneal and oculocephalic reflexes, significant hypotonia, no spontaneous breathing and absent deep tendon reflexes.

Ammonia, lactate, CRP, and rapid viral studies are found to be normal. EEG reveals diffusely suppressed activity without epileptiform features and brain MRI is normal. The diagnosis is suspected on the fourth day of admission with additional detailed history from the mother who describes drooling and fixed gaze, a day prior to deterioration. Intravenous botulinum anti-toxin is administered, and stool samples are sent to for confirmatory testing, which confirm the presence of *Clostridium botulinum type B*. Neuromuscular exam gradually improves; he is extubated on day 14 and discharged on day 36. At 11-month follow-up he has no residual neuromuscular deficit. No environmental exposure is subsequently identified. Infantile botulism is caused by the ingestion of *C. botulinum* spores that colonize the host GI tract and produce the toxin in vivo. It classically presents as acute or subacute onset of weakness and hypotonia, progressing to symmetric, descending, flaccid paralysis. Often there is a nonspecific prodrome of poor feeding and change in stool pattern. Catastrophic presentations can mimic sepsis or metabolic disorders that may delay diagnosis. An overdose in gentamicin, a drug that decreases presynaptic calcium availability and reduces acetylcholine release, likely potentiated the neuromuscular blockade in our patient. Intravenous botulinum anti-toxin is approved for the treatment of suspected infant botulism within 7 days of admission and should be given promptly when the diagnosis is suspected.

304 CORRELATION OF CHANGES IN PERFUSION INDEX AND INTERMITTENT HYPOXEMIA WITH BLOOD TRANSFUSION IN PRETERM INFANTS

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Purpose of Study Intermittent Hypoxemia (IH) or episodic drops in oxygen saturation (SpO2), is common in preterm infants. IH is associated with neonatal morbidities. Studies report that red blood cell transfusion (RBCtx) decreases IH events. Perfusion index (PI), a non-invasive perfusion measure, may potentially guide transfusion management in preterm infants. This study would like to determine if there is a correlation between changes in PI and IH after RBCtx.

Methods Used We prospectively enrolled patients with gestational age (GA) <32 wks who received RBCtx. We continuously monitored PI and SpO2 with high resolution pulse-oximeters (2 s averaging time, 1 s sampling rate). Outcome measures were SpO2<90%, SpO2<85% and SpO2<80%. We compared mean PI and IH frequency 24 h pre and post RBCtx.

Summary of Results Data from 27 infants receiving 52 transfusions after 1 week of life were analyzed: mean GA: 26.0 weeks (range 23.3–28.6), birthweight: 855 g (range 480–1360), day of transfusion: 25.6 days (range 8–61). There was a significant decrease in IH<85% after RBCtx by 3.26 IH events/hr [95%CI (0.93 - 5.58), p= 0.01] and in IH<80% by 2.95 [95%CI (1.31 - 4.59),p=0.001]. There is a non significant drop in IH<90% by 2.04 IH events/hr [95%CI (0.68–4.76), p=0.14). 24 hr PI after RBCtx improved by 0.07 [95%CI (-0.04,0.17], p=0.19]. Linear regression model showed a correlation between the change in pre and post RBCtx PI and drop in IH events/hr (IH<90% 0.24, p=0.14; IH<85% 0.3, p=0.03; IH<80% 0.32, p=0.02).

Conclusions There is a correlation between changes in mean pefusion index (PI) and intermittent hypoxemia (IH) with RBCtx in preterm infants. PI may be a promising non-invasive tool to help guide RBCtx decision making in in preterm infants.

305 ROUTINE CLINICAL USE OF *LACTOBACILLUS RHAMNOSUS* GG THERAPY AND RISK OF NEC IN VERY LOW BIRTH WEIGHT INFANTS

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Purpose of Study In meta-analyses of randomized trials, probiotic therapy results in a decreased risk of necrotizing enterocolitis (NEC). However, the external validity of these findings in routine clinical practice and the interaction with other therapies, such as antimicrobial treatment, is uncertain. Our objective was to evaluate the effectiveness of *Lactobacillus rhamnosus* GG ATCC 53103 (LGG) treatment on the risk of NEC in very low birth weight infants (VLBW, <1500 g).

Methods Used We performed a retrospective observational cohort study at a single center of VLBW infants born from 8/1/2008 to 7/31/2015, excluding infants with congenital anomalies. Routine use of LGG began in 2014. We evaluated the association between treatment with LGG and outcome of NEC using multivariable logistic regression, with adjustment for birth weight, multiple gestation, receipt of placental transfusion, duration of initial ampicillin therapy and receipt of second course of ampicillin treatment. For infants with NEC, antibiotic exposure was assessed up to 1 day prior to NEC onset.

Summary of Results We evaluated 608 VLBW infants. The mean (SD) gestational age and birth weight of the cohort was 28.4 (2.9) weeks and 1022 (296) g, respectively. Sixty-eight (11%) infants developed NEC and 55 (9%) infants died from all causes. Ninety-six (16%) infants received LGG. The median age at first dose of LGG was 7 days (IQR 5–11) and median duration of treatment was 27 days (IQR 14–40). In multivariable analysis, we found no association between LGG treatment and risk of NEC (adjusted odds ratio (aOR) 1.31; 95% CI 0.54–3.19). We found a significant association between receipt of second course of ampicillin and NEC (aOR 3.79; 95% CI 2.03–7.06), but no association with duration of initial course of ampicillin and NEC (aOR 1.05 per day; 95% CI 0.97–1.15). We found similar results when evaluating the composite outcome of NEC or death and when limiting the analysis to a more contemporary period from 2012–2015.

Conclusions In this study, LGG treatment was not associated with a decreased risk of NEC, although a second course of ampicillin exposure was associated with an increased risk of NEC. These findings suggest that the

effect of probiotic therapy may be negatively influenced by antimicrobial exposure in VLBW infants.

306 CRITERIA FOR EXTRACORPOREAL MEMBRANE OXYGENATION IN NEONATES WITH HYPOXIC ISCHEMIC ENCEPHALOPATHY

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Purpose of Study Extracorporeal Membrane Oxygenation (ECMO) is an effective treatment for neonates who failed initial medical management for respiratory failure. Extracorporeal Life Support Organization guidelines state that "irreversible brain damage" is a contraindication for neonatal ECMO, and infants with hypoxic ischemic encephalopathy (HIE) have been precluded from ECMO in many centers. However, clinical experience and limited case reports have shown good outcomes in these patients. We hypothesized that a scoring tool will identify neonates with mild/ moderate HIE who may benefit from ECMO in case of respiratory failure.

Methods Used We developed an institutional scoring tool to identify potential ECMO candidates with neonatal HIE using modified Sarnat staging and data from Ambalavanan et al. We retrospectively reviewed the medical records of neonates from 2009–2014 with HIE for oxygenation index and suitability for ECMO based on our recently developed criteria. We used follow-up visits to assess the degree of developmental delay (DD) using GMFCS.

Summary of Results Thirty-nine neonates were eligible for the study. Based on our scoring tool, 24 neonates would be candidates for ECMO if they met the respiratory criteria. Of these neonates, 21 survived to discharge and only one of the survivors had severe DD (40% lost to follow up [LTF]). Of the 15 who did not meet ECMO inclusion criteria, 11/12 had death or severe DD, 3 were LTF. There was a statistically significant difference between survival in the ECMO candidates vs. non-candidates ($p=0.01$). 8 neonates with HIE had OIs>20 meeting respiratory criteria for ECMO. 3 were offered ECMO, 2 had concomitant CDH and did not survive. The single survivor was noted to have severe DD. 1 of the 5 not offered ECMO would have been a candidate based on our scoring and survived without severe DD. 3/4 of the noncandidates died after withdrawal of care and the other survivor was LTF.

Conclusions Our scoring tool was able to identify neonates with mild to moderate HIE with good neurological outcomes who would qualify for ECMO. Our study had a small sample size and inadequate follow up, therefore the scoring tool needs further validation with prospective studies.

307 BREAKING NEWS: HUMERAL PHYSEAL FRACTURE IN A NEONATE

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Case Report Birth injuries are relatively rare with incidence of long bone fractures in particular occurring in 0.75% of live births. Fractures presenting with limb pseudoparalysis and swelling can mimic osteomyelitis, septic arthritis, cellulitis, or brachial plexus injuries making them difficult to diagnose. Due to the immature skeleton of neonates, radiographs may not reveal these injuries. We present a 39 1/7 male infant born via Caesarean section secondary to cord prolapse. Following delivery, he was brought to the NICU for persistent respiratory distress. He was started on empiric antibiotics and placed on oxygen. Respiratory support was rapidly weaned to room air. On day of life 1, he developed left arm edema with mild erythema and decreased spontaneous movement. Left arm was noted to be adducted and internally rotated with wrist flexion concerning for brachial plexus injury. Pain was elicited with passive elbow flexion. Plain radiographs were negative. Initial CRP was elevated at 3.1 mg/dL. Due to concern for infection, Vancomycin was added for broadened coverage. Repeat radiographs again revealed no bony abnormalities. Ultrasound uncovered a distal humeral physeal separation injury with posterior displacement of the cartilage. MRI confirmed these findings. Closed reduction was performed, and a splint was applied. He completed a 7-day course of antibiotics for presumed cellulitis and was discharged home. Imaging at orthopedic follow-up appointments revealed a healing distal humeral fracture. Transphyseal fractures of the distal humerus are rare injuries of neonates. Long bone fractures typically occur due to a forced, sudden traction from twisting and pulling maneuvers that are most often seen during Caesarean sections as opposed to vaginal deliveries that are traditionally associated with birth injuries. Separation of the distal humeral epiphysis can be challenging to diagnose via plain radiographs in neonates due to radiolucency of the cartilaginous epiphysis. If radiographs are unable to visualize the injury, an ultrasound should be obtained. It is quick, easy and does not require procedure sedation. MRI is not necessary for confirmation if epiphyseal fracture is visualized on ultrasound. Immobilization of the affected limb is usually sufficient for treatment.

308 HEMATOLOGIC PREDICTORS OF NECROTIZING ENTEROCOLITIS

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Purpose of Study At present, there are no early predictors for the progression of necrotizing enterocolitis (NEC) in preterm infants. All infants with suspected NEC remain on antibiotics, parenteral nutrition and bowel rest for a minimum of 24 hours. One study found that a drop in the absolute monocyte count (AMC), seen in the first 24 hours from onset of symptoms, was associated with the progression to a more advanced NEC. The purpose of our study was to determine whether a drop in the AMC will distinguish NEC from other causes of feeding intolerance in preterm infants.

Methods Used We retrospectively collected demographics, hematologic, and gastrointestinal morbidity data on 132 infants, <32 weeks gestation, born from 2003 through

Abstract 308 Table 1 Percent Change in White Blood Cell count

	Suspected NEC	Definite NEC
N	69	37
WBC (%)	5 (−30 – 35)	−41 (−68 – −13)*
AMC (%)	−8 (−47 – 82)	−31 (−79 – 4)
ANC (%)	15 (−44 – 74)	−64 (−90 – −26)*

% change from baseline are represented as median (25th–75th)
*p<0.05, definite NEC vs. suspected NEC

2013, and were kept "nil per os" (NPO) for >24 hours. Infants were excluded (n=26) if complete blood cell count (CBC) was not obtained within 24 hours after initiation of NPO. We calculated the percent change in total white cell (WBC), AMC, and absolute neutrophil (ANC) from baseline (>48 hours prior to NPO) to the first-24-hour.

Summary of Results Baseline cell count values were not different between the groups, Suspected NEC (n=69) and Definite NEC (n=37). The table below summarizes the change in blood cell counts in both groups. Contrary to our expectations, NEC was not associated with a significant drop in AMC. However, infants with definite NEC have significantly lower absolute values of WBC, AMC and ANC during the first 24-hour from onset of symptoms compared to infants with suspected NEC. The predictive accuracy of these respective values are represented by ROC Area under the Curves of 0.77, 0.80, and 0.81.

Conclusions In our study, the absolute values rather than the relative drop in AMC were associated with NEC. A progressive decline in AMC could have started days prior to the onset of NEC. Further work is needed to confirm our findings.

309 SEVERE HYPERBILIRUBINEMIA IN NEONATES DURING ECMO: IMPORTANT ROLE OF HEMOLYSIS

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Purpose of Study Postnatal hyperbilirubinemia is frequent in neonates and potentiated by underlying hemolytic conditions. Hemolysis is a known complication of extra corporeal membrane oxygenation (ECMO). Direct hyperbilirubinemia is also commonly reported in neonates during ECMO. We characterized the incidence and nature of severe hyperbilirubinemia (total serum bilirubin [TSB]≥20 mg/dl) and clinical risk factors associated with its occurrence in a cohort of neonates managed on ECMO.

Methods Used Fourty consecutive neonates (≤ 28 days of life) who underwent ECMO between April 2009 to December 2011 at Childrens Hospital of Pittsburgh were studied. TSB, direct bilirubin and other clinical labs obtained as part of routine care, details of ECMO support, and clinical course were analyzed. Bilirubin levels were plotted using Bhutani normogram.

Summary of Results Most of neonates (27/40=68%) demonstrated peak TSB <40% on Bhutani nomogram. Four infants (10%), however, developed severe hyperbilirubinemia (peak TSB: 32.8, 23.8, 43.2, 28.5 mg/dl) while on ECMO. In these 4 infants TSB rose to >95% on the Bhutani nomogram in conjunction with a rising direct bilirubin (respective peak direct bilirubin:18.2, 8.2, 24.2, 16.2 mg/dl); the direct fraction accounting for between 37–68% of TSB. Three of the 4 showed evidence of hemolysis; in two cases during hemofiltration and in another with a clot in the ECMO circuit. In addition to phototherapy, plasmaphoresis was used in 3 of 4 cases and in 2 circuit changes were necessary to control hyperbilirubinemia. Three of the four neonates survived (one death secondary to presumed hemachromatosis) and survivors demonstrated normal ABER and no evidence of chronic bilirubin encephalopathy on MRI or exam. One other infant showed elevated direct bilirubin fraction (> 2.0 mg/dL) without severe hyperbilirubinemia.

Conclusions We conclude that severe hyperbilirubinemia is uncommon in neonates undergoing ECMO but when it occurs it is accompanied by marked elevations in direct bilirubin. Hemolysis secondary to mechanical factors was observed in most of severe hyperbilirubinemia cases suggesting that the ECMO circuit should be considered as an etiologic mechanism and therefore examined for such evidence.

310 NEONATAL RENAL FAILURE DUE TO MATERNAL ACE-I USE

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Case Report Angiotensin converting enzyme inhibitors (ACE-I) are widely used as first-line antihypertensive agents. Unfortunately, this medication class has been linked to fetal adverse effects when taken during the second or third trimester of pregnancy. We present a 30 2/7 WGA growth-restricted female born to a 32-year-old G5P4 mother via urgent C-section due to oligohydramnios and absent end diastolic flow. At delivery the patient exhibited poor respiratory effort and bradycardia requiring intubation and chest compressions with APGARs of 1, 4, and 7. Per obstetrician records, the mother was late to prenatal care with an unknown medication history. Further investigation revealed a history of chronic hypertension, diabetes, hypercholesterolemia, myocardial infarction, and cardiac stenting for which she was on lisinopril, aspirin, metformin, metoprolol, and pravastatin. The patient was maintained on ventilator support and received two normal saline boluses then dopamine due to continued hypotension and anuria. The initial creatinine level was 1.05 mg/dl, with increase to 1.7 mg/dl on day of life (DOL) 2. Urine output was noted on DOL 2, increasing over time to reach normal levels on DOL 6. Dopamine was discontinued. Creatinine trended down reaching <1 mg/dl by DOL 7. The patient was extubated on DOL 16 and by DOL 20 was stable on room air with normal renal function. The renin-angiotensin system (RAS) is necessary for normal renal development in the fetus. ACE-I cross the placenta and block angiotensin I from converting into angiotensin

II. Without angiotensin II the fetus experiences hypoperfusion, ischemia, and damaged renal tubules. As in our patient, RAS blockade can ultimately contribute to oligohydramnios, anuria, renal failure, hypotension, growth restriction, and respiratory distress. Although not seen in our patient, other adverse outcomes include hypocalvaria, patent ductus arteriosus, extremity defects, miscarriage, or death. Upon discharge, patients require long-term follow up due to the risk of developmental delay, failure to thrive, and chronic kidney disease. Although the detrimental effects of ACE-I have been known since the 1980's, fetal exposure continues to occur. It is important that physicians educate women about the fetal risks of using ACE-I, and that they perform a detailed medication history.

311 DUCTUS ARTERIOSUS ANEURYSM: A RARE ABNORMALITY PRESENTING AS A MEDIASTINAL MASS

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Case Report A ductus arteriosus aneurysm (DAA) is a rare abnormality characterized by bulging or widening of the ductus arteriosus. In asymptomatic patients the lesion most commonly resolves spontaneously. However, when symptomatic the complications of this abnormality can be fatal, necessitating early detection and surgical repair. We present a 39 WGA male born to a G1P0 mother via emergent c-section secondary to fetal intolerance of labor. At birth the amniotic fluid was meconium stained and the patient was noted to have poor respiratory effort, dusky color, and hypoxemia. In the NICU, the patient was intubated secondary to suspicion for critical congenital heart disease versus persistent pulmonary hypertension of the newborn. Echocardiogram obtained on DOL 5 exhibited a 2 cm cystic mass extrinsically compressing the left pulmonary artery. Right to left shunting was noted across a patent foramen ovale due to the obstruction. Follow up CT and MRI confirmed a mediastinal mass with mixed cystic and solid enhancing components in the left suprahilar region with significant compression of the left main branch of the pulmonary artery. On DOL 11 the patient was taken to the operating room; an unexpected finding of a patent DAA with thrombus was identified. The thrombus propagated into the main pulmonary artery and extended into the proximal segment of the left pulmonary artery resulting in complete obstruction. The surgeon performed a PDA division with resection and a pulmonary artery thrombectomy. The patient recovered well and was discharged on DOL 35 to follow up with cardiology as an outpatient. The initial diagnosis of a DAA usually occurs prior to 2 months of age and is best detected by echocardiogram. The most common presenting symptoms are: respiratory distress, cardiac murmur, stridor, and hypoxia. Serious complications include: rupture of the aneurysm, erosion into or compression of adjacent structures, expansion of the thrombus into the pulmonary artery, infection, and thromboembolism. Since serious complications can result in death, they necessitate surgical correction. Due to the nonspecific presenting symptoms and the potential for a detrimental outcome, clinicians should include DAA in the differential diagnoses of a mediastinal mass.

312 EFFECT OF EARLY CONTINUOUS RENAL REPLACEMENT THERAPY WITH EXTRACORPOREAL MEMBRANE OXYGENATION ON NEONATAL NUTRITION

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10.1136/jim-2015-000035.311

Purpose of Study Extracorporeal membrane oxygenation (ECMO) is a lifesaving therapy offered to critically ill patients with select, amenable diseases. Continuous renal replacement therapy (CRRT), specifically continuous venovenous hemofiltration (CVVH), is an adjunct therapy primarily used to manage the refractory fluid overload that commonly occurs in patients requiring ECMO. Neonatal patients are particularly sensitive to fluid shifts, and maintaining near euvolemia has been associated with better outcomes in neonates on ECMO prompting our neonatal intensive care unit to begin early CRRT in all neonates on ECMO. We hypothesize that by improving fluid balance, early CVVH allows clinicians to provide better parenteral nutrition (PN) to neonates on ECMO thereby encouraging growth, recovery, and development.

Methods Used We conducted a retrospective chart review of 10 neonates on ECMO with and 10 neonates on ECMO without early CVVH. All patients were treated between January 1, 2009 and December 31, 2013. Values including demographics, fluid volumes administered, protein/carbohydrate/lipid orders, and calories provided were recorded for the first 3 days following ECMO cannulation. Two sample t-tests were performed.

Summary of Results The two groups were not significantly different when comparing birth weight (ECMO without CVVH: 3257 grams, ECMO with CVVH: 3080 grams) or gestational age at birth (ECMO without CVVH: 38 5/6 weeks, ECMO with CVVH: 38 weeks). Patients receiving early CRRT were prescribed higher volumes of PN (ECMO without CVVH: 60.1 ml/kg/day, ECMO with CVVH: 84.9 ml/kg/day; p: 0.00027) as well as greater amounts of protein (ECMO without CVVH: 2.72 g/kg/day, ECMO with CVVH: 3.09 g/kg/day; p: 0.00245). Early CRRT during ECMO in neonates did not significantly change glucose infusion rates (ECMO without CVVH: 7.9 mg/kg/min, ECMO with CVVH: 7.8 mg/kg/min) or total kilocalories provided (ECMO without CVVH: 70.6 kcal/kg/day, ECMO with CVVH: 69.7 kcal/kg/day).

Conclusions Institution of early CRRT in neonates on ECMO allows for administration of greater volumes of PN with improved protein administration. This study characterizes one of the benefits of early CRRT initiation in neonates on ECMO and suggests these patients could experience improved nutritional outcomes.

313 MYELOMENINGOCELE AND MICRONUTRIENT INTAKE IN MOTHERS WITH GENETIC POLYMORPHISMS IN METHYLENETETRAHYDROFOLATE REDUCTASE C677T AND A1298C

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Purpose of Study The purpose of this study is to determine whether the association between methylenetetrahydrofolate reductase (MTHFR) C677T and A1298C and myelomeningocele is improved by maternal micronutrient intake, especially those involved in one-carbon metabolism.
Methods Used In this study, 260 case mothers with children affected with myelomeningocele (MM), a major form of neural tube defect (NTD), were enrolled from 1996 to 2006. Participants were recruited from spina bifida clinics in Houston, TX, Los Angeles, CA and Toronto, ON, Canada. The case mothers included 109 Caucasians, 121 Hispanics and 30 individuals of other ethnic descent. A primary survey elicited sociodemographic information, pregnancy history, maternal health history and maternal exposures to hazardous environments. A secondary survey, the Gladys Block Food Frequency Questionnaire, elicited maternal dietary intake and vitamin supplementation. TaqMan genotyping assay and Sanger sequencing were used to identify the *MTHFR* C677T and A1298C genotypes. Two reference women, selected from the National Health and Nutrition Examination Survey (NHANES III) as controls for comparison, were matched to one case mother via age, genotypes, ethnicities and supplementation. Case and control reference women were stratified by race, supplementation and genotypes. The genetic variants, in conjunction with micronutrient intake, were compared between MM case mothers and control reference women to determine modification of NTD risk. STATA software was utilized to evaluate the odds on the effect of genotypes and supplements in NTD pregnancy. A p-value $\leqq 0.05$ suggests significant difference.
Summary of Results Results will be presented. We anticipate that mothers with rare alleles in *MTHFR* C677T and A1298C who have increased intake of micronutrients involved in one carbon metabolism will have a lower odds ratio of having offspring with MM compared to those mothers with a lower intake of the same micronutrients.
Conclusions Conclusion will be presented.

314 TRENDS IN INCIDENCE AND OUTCOMES OF MULTIPLE GESTATION BIRTHS AT A LEVEL 3 NICU FROM 1990–2013

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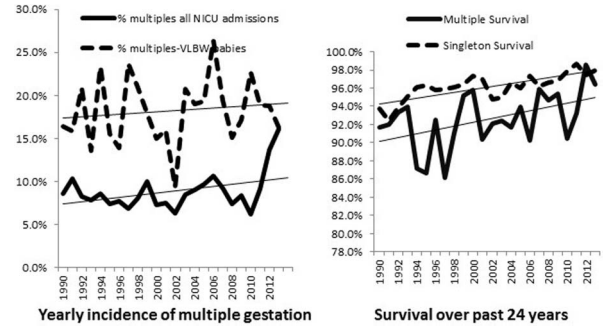
Purpose of Study National vital statistics data show multiple birth rates are rising, which correlates with an increase in artificial reproductive technology (ART). However, Regional One Hospital (ROH) serves inner city, resource-limited patients where ART is rare. We evaluated the incidence of multiple gestation births (MG) in our population. We also compared clinical outcomes from the past 24 years, especially in very low birth weight infants (VLBW).
Methods Used We reviewed our perinatal database from 1990 through 2013 at ROH, a level 3 NICU and identified MG births. Infants with missing data were excluded. We reviewed the yearly trend and compared 3 epochs (1990–97, 1998–2005, 2006–13) for all babies and VLBW babies. We also reviewed survival and clinical outcomes for singleton gestation (SG) and MG.
Summary of Results 32988 babies were admitted to NICU in past 24 years of which 2936 (9.7%) were born as MG; 2826 twins, 99 triplets and 4 quadruplets. 8 year epochs show an increase from 8.32% in epoch 1 to 9.89% in epoch 3. VLBW MG inicidence increased from 17.9% (epoch 1) to 19.4 % (epoch 3). Fig 1 shows yearly trends of incidence and survival. Mean BW increased from 1.5 kg to 1.9 kg for MG and from 2.18 kg to 2.98 kg for SG. Neonatal outcomes in VLBW infants were not significantly different between MG and SG. Similar number of VLBW babies were SGA in SG and MG (37% vs 39%). However 12.9% babies were SGA in MB compared to 3.9% in SG in babies over 1500 g BW.
Conclusions There is an increase in MG admissions in our NICU in past 8 years even without ART. MG tend to be more growth restricted over 1500 g BW, but overall survival and BW seem to be improving over the past 24 years. The reasons behind increasing MG need to be studied.



Abstract 314 Figure 1

315 PREVALENCE OF INITIAL COAGULOPATHY AND ASSOCIATED BLEEDING OUTCOMES IN NEONATES WTH MODERATE-TO-SEVERE HYPOXIC-ISCHEMIC ENCEPHALOPATHY

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Purpose of Study The prevalence of coagulopathy and associated bleeding in infants with hypoxic-ischemic encephalopathy (HIE) has not been well described. We evaluated the prevalence of initial coagulopathy in neonates

with moderate-to-severe HIE and determined the associated transfusion burden and bleeding outcomes.

Methods Used Retrospective observational cohort study at 2 hospitals in Atlanta, GA. We included infants ≥1800 g at birth with moderate-to-severe HIE with coagulation testing within 12 hr of life and birth between 1/1/08 to 12/31/13. We ascertained all blood products transfused and bleeding events in the first 96 hrs of life and used the Neonatal Bleeding Assessment Tool (NeoBAT) to evaluate bleeding severity according to WHO classification. We used logistic regression to evaluate the association between initial coagulation parameters and risk of bleeding.

Summary of Results Of 132 infants with moderate-to-severe HIE, 98 had initial coagulation testing and were included. The prevalence of prothrombin time (PT)≥18 sec was 69% (95% CI 60–79). Twenty-seven (28%) infants had abnormal bleeding and 56 (57%) received at least one blood product transfusion. The most common products transfused were fresh frozen plasma (71%) and packed red blood cells (24%). The median initial PT was higher in infants with bleeding compared to those without, 28 sec (interquartile range [IQR] 18–58) vs. 19 sec (IQR 17–26; P=0.004). In univariable analysis, PT (OR per 10 sec increase 1.60, 95%CI 1.19–2.14; P=0.002), fibrinogen <150 mg/dl (OR 6.03, 95%CI 1.96–18.6; P=0.03) and platelet count $<100\times10^3$/ml (OR 7.86, 95%CI 1.85–33.4; P=0.03) were each associated with an increased risk of bleeding. In multivariable analysis, platelet count and fibrinogen level, but not PT, were independently associated with bleeding. The severity of bleeding increased with increasing PT and was related to both initial platelet count and fibrinogen level.

Conclusions Among infants with moderate-to-severe HIE, coagulopathy is prevalent and associated with high transfusion burden and increased risk of bleeding. Further studies are necessary to guide transfusion practices in this population.

316 VITAMIN D AND BONE HEALTH IN VERY LOW AND EXTREMELY LOW BIRTH WEIGHT INFANTS

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10.1136/jim-2015-000035.315

Purpose of Study The study purpose is to assess the adequacy of current AAP recommendation of vitamin D supplement on premature infants' (<1500 gm) vitamin D level and bone mineral content.

Methods Used This is a prospective non-interventional trial for assessing the adequacy of Vitamin D at a dose of 400 IU for maintaining adequate Vitamin D level and Bone Mineral Density in neonates whose birth weight ranges from 500 to 1500 grams. VLBW (n=9, 5-male, 4-female) and ELBW (n=10, 6-black, 4-female) infants were recruited upon birth at GRU's Children's Hospital of Georgia in first 48 hrs. Written and informed consent was obtained from parents. Enrolled infants received 400 IU of Vitamin D as per clinical practice. The supplementation of Vitamin D began after birth. If baby not getting fed enterally, received 400 IU Vitamin D in TPN. Intravenous Vitamin D supplement was changed to oral once infant reached full enteral feed. Baseline 25(OH) D, Calcium, Phosphorus, Alkaline phosphatase and PTH level were measured in the first 48 hrs of life and thereafter every 2 weeks until 2000 grams. Infants were sent home on 1 ml Poly-vi-sol (contains 400 IU Vitamin D). Enrolled infants will return at 9 months of age for DEXA scan.

Summary of Results Of 19 infants studied so far, we found the Vitamin D supplement of 400 IU/day is enough to maintain 25(OH) D level >30 ng/ml in ELBW (7 out of 10 infants) and VLBW (9 out of 9 infants). All these infants' enteral feedings were fortified with human milk fortifier (24 cal). Whether Vitamin D supplement is enough for adequate bone mineral density for these premature infants remains to be studied.

Conclusions There is a close correlation between maternal and fetal 25(OH) D levels. Low levels may be found at birth in infants born to women with low levels of 25(OH) D. Supplementation of vitamin D is critically important especially in premature infants to maintain adequate blood level. Our data so far suggest that 400 IU/day of vitamin D in addition to that present in fortified human milk may suffice to maintain 25 (OH) D levels >30 ng/ml. We will also study its' adequacy to maintain bone mineral density in these infants.

317 SWALLOW-BREATH INTERACTION VARIATIONS ASSOCIATED WITH INTRAVENTRICULAR HEMORRHAGE

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Purpose of Study We have previously described how swallow and breath interact during nonnutritive suck (NNS) in low-risk preterm (LRP) infants. 3 types of swallow-breath interaction (SwBr) were identified: central apnea (CA), obstructive apnea (OA) and attenuated respiration (AR). 5 phases of respiration at which swallow occurred (POR) were identified: beginning expiration (BE), mid-expiration (ME), end-expiration (EE), mid-inspiration (MI) and apnea (AP). We now use our method to compare SwBr in LRP infants vs. infants affected by Grade 3/4 intraventricular hemorrhage (IVH).

Methods Used We studied 16 LRP and 12 IVH infants. Babies were fitted with custom monitors connected to a computer to create multi-channel linear representations of NNS, including swallow pressure, nasal airflow and chest movement. SwBr and POR were identified. Groups were compared using logistic models fitted by generalized estimating equations.

Summary of Results Results shown as estimated odds ratio (OR) and p-value within groups, and p-value comparing OR between groups. SwBr differences between groups were noted for AR with: each week of post-menstrual age (LRP: 1.290,0.032; IVH: 0.767,0.009; Between (Btwn): 0.001); each 100 g of Birth Weight (LRP: 1.02,0.62; IVH: 1.243,0.004; Btwn: 0.032); each week of gestational age (LRP: 0.904,0.284; IVH: 1.224,0.067; Btwn: 0.037); and each week post-first nipple (WPFN) feeding (LRP: 1.562;

<0.0001; IVH: 0.885,0.446; Btwn: 0.0037) and for CA with male gender (LRP:2.817,0.112; IVH: 0.440,0.076; Btwn 0.020). POR differences between groups were noted for EE and each week before first nipple feeding (LRP: 0.750,0.0007; IVH: 0.979,0.827: Btwn: 0.041); and MI and each WPFN (LRP: 0.626,0.027; IVH: 1.248,0.299; Btwn: 0.022). There were differences noted between groups with the number of swallows in a study and BE (LRP: 0.947,0.288; IVH:1.219,0.003; Btwn: 0.003) and EE (LRP: 0.997,0.869; IVH: 0.818,0.001; Btwn: 0.0003).
Conclusions IVH can affect development of SwBr and POR, particularly of AR. Since NNS is usually associated with brainstem function, IVH may be indicative of deeper brain injury. This method may contribute to predicting long-term developmental outcomes.

318 OUTCOME OF PRETERM INFANTS RECEIVING HIGH DOSE INDOMETHACIN

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Purpose of Study Low-dose indomethacin (Ind) is used as prophylaxis for intraventricular hemorrhage (IVH). Our aim was to evaluate IVH and major neonatal outcomes in ELBW infants after exposure to high-dose Ind.
Methods Used In this retrospective case control study, we collected clinical data from electronic medical records of all ELBW admission over 5 years (Jan 2010- Dec 2014). Infants who did not survive for at least 72 hours or had known congenital or chromosomal anomalies were excluded from the study. We evaluated the effect of high-dose Ind on IVH, which was given to neonates for treatment of Patent Ductus Arteriosus(PDA)
Summary of Results We collected data on 141 subjects (47.5% males and 52.5% female) with mean gestational age 26.0+1.4 wks and the mean birth weight 751± 152 g. 35 neonates received high-dose Ind, versus 106 neonates who received low-dose Ind or no Ind. The mean length of hospital stay was 97.3+37 days. Babies who received high-dose IND, were more likely to be female, had a higher incidence of IVH, sepsis, and BPD (p=0.024, p=0.011, p=0.020 respectively). In the regression model, high-dose Ind treatment remained significant (p=0.036) when you have IVH as the outcome.
Conclusions Our data suggests that high-dose Ind is not associated with decreased incidence of IVH. It also shows that ELBW infants who received high-dose Ind treatment have increased incidence of IVH, sepsis and BPD.

319 SERIAL CBC'S TO PREDICT INFECTION IN HEALTHY NEWBORNS WITH MATERNAL CHORIOAMNIONITIS (MC)

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10.1136/jim-2015-000035.318

Purpose of Study Because MC is a risk factor for neonatal sepsis, AAP guidelines suggest a sepsis workup & antibiotics for all asymptomatic newborns with MC. At UTMB, we do CBCs at 6 & 24 h after birth, & initiate the sepsis work-up and antibiotics (Ampicillin & Gentamicin, AG) only if the baby develops signs of sepsis or the CBCs suggest infection. The purpose of this study was to evaluate the safety & utility of monitoring serial CBCs in asymptomatic babies >= 35 wks gestational age (GA) with MC.
Methods Used A retrospective chart review was performed of well babies with GA >= 35 wks & MC in 2013 (12 mos). Maternal treatment with antibiotics was required for the diagnosis of MC. IT ratio (immature:total neutrophils) was considered suspicious if >= 0.3. The data were analyzed using descriptive statistics & independent sample T- tests.
Summary of Results The study population included 275 infants (50.9% males). Mean GA was 38.8 wks (35–41 wks) & mean BW was 3368 g (2070–5029 g). 57.8% of the infants were born vaginally. Of 275 mothers with MC, 231 were GBS negative, 28 were GBS positive & adequately treated, 3 were positive but untreated & 12 were unknown (4 adequately treated). 188 (68.4%) of mothers were given antibiotics >1 h before delivery. The first CBC was done at 0–12 HOL (mean 5.85) with mean ANC 14.9 (2.5–35.1) & mean IT ratio 0.29 (0.19–0.88). 40.7% of infants had a suspicious IT ratio on their first CBC. The second CBC was done at 7–32 HOL (mean 22 h) with mean ANC 12.16 (3.5–35.2) & mean IT ratio 0.18 (0–0.89). 18.5% of infants had a suspicious IT ratio on the second CBC.The IT ratio increased on the second CBC in 48 infants, including 26 with normal IT on the first CBC. For the first CBC, the IT ratio was different between the treated & untreated infants (p<0.001). For the second CBC, the IT ratio for the treated group was also different from the untreated infants (p=0.001). Of the 275 infants, 36 (13.1%) were transferred to the NICU for further workup & AG. 1 had a positive blood culture & 21 were treated with AG for >48 h for clinical sepsis. No infants were readmitted for possible sepsis after discharge.
Conclusions In our patient population, using serial CBCs & clinical signs to predict sepsis in babies with MC appears to be appropriate. The increased length of stay & hospital costs associated with AG therapy were avoided in 87% of infants with MC.

320 GROWTH AND TOLERANCE ON STERILE, READY TO FEED DONOR HUMAN MILK

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10.1136/jim-2015-000035.319

Purpose of Study To report growth and tolerance data from a US NICU using a new sterile, ready to feed donor human milk (DHM) product.
Methods Used This is a retrospective chart review of growth and feeding tolerance in infants fed DHM (Co-op Donor Human Milk, Medolac Laboratories, Lake Oswego, OR) when mother's breast milk (MBM) was unavailable. Infants were preterm (<37+0 weeks post-menstrual age) identified from DHM logs during the first

Abstract 320 Table 1

Study Period	Feeding Type			Frequency of Intolerance (n,%)	
	MBM	DHM	Formula	DHM	Other
RTBW (n=37)	39%	55%	6%	1/37 (2.7%)	1/37 (2.7%)
Growth Period (n=37)	36%	29%	35%	0%	3/37 (8.1%)
Growth Period: DHM (n=27)	19%	71%	10%	0%	0%

Abstract 320 Table 2

Study Period	Weight Change		Head Change
	Under 2 kg (g/kg/day)	2 kg - Discharge (g/day)	(cm/week)
Growth Period (n=37)	17.1±3.0	30.0±7.4	0.9±0.2
Growth Period: DHM (n=27)	16.3±2.8	31.6±9.9	1.0±0.2

6 months of use (7/1/14 - 12/31/14). Electronic health records were reviewed for medical history, anthropometrics, and feeding history. Growth velocity (g/kg/d while under 2 kg; g/day from 2 kg to discharge), feeding type, and frequency of intolerance (n/group, interruptions to enteral feedings for 24 hours or more due to gastrointestinal intolerance) were calculated from raw data. Data were grouped during two main periods: 1) birth to return to birth weight (RTBW) and 2) the growth period (RTBW to discharge). A separate analysis was conducted during the growth period when feedings were predominantly DHM.

Summary of Results Infants (n=37) were a mean of 31 +1 weeks and 1539 g at birth; 54% were male and 22% were <10th percentile. Infants experienced postnatal weight loss of 9.7±4.2% and returned to BW at a mean of 12±3.7 days. Ninety-five percent of infants received some of their own mother's milk. HM feedings were fortified according to local protocol with HM-based or bovine products. None of the feeding intolerances were diagnosed as necrotizing enterocolitis (NEC).

Conclusions This is the first report of successful use of a new DHM product when MBM was not available. Growth rates were consistent with catch-up growth. Tolerance was the same or better than with other feedings. Use of DHM did not discourage mothers from providing their own milk.

321 CIRCULATING LEVELS OF INTER-ALPHA INHIBITOR INVERSELY CORRELATE WITH PREDICTIVE MODEL FOR SEVERITY OF ILLNESS IN NEONATES WITH NECROTIZING ENTEROCOLITIS, SPONTANEOUS INTESTINAL PERFORATION AND MATCHED CONTROLS

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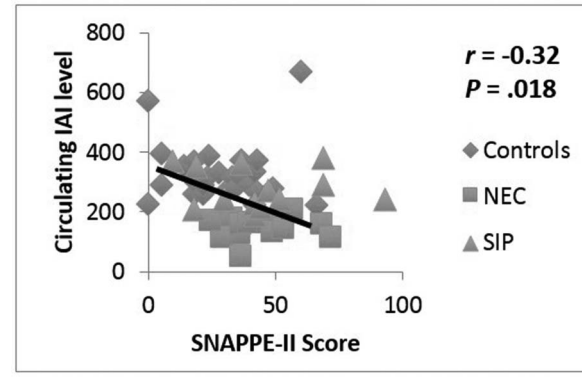
10.1136/jim-2015-000035.320

Purpose of Study Inter-alpha inhibitors (IAI) are natural serine protease inhibitors and innate immunomodulators. Circulating IAI levels are significantly reduced in necrotizing enterocolitis (NEC) but remain unchanged in spontaneous intestinal perforation (SIP). Objective was to examine the correlation between circulating IAI levels and predictive model of disease severity in infants with NEC, SIP and matched controls.

Methods Used Prospective observational unmasked study. The Score for Neonatal Acute Physiology Perinatal Extension II (SNAPPE-II) was used to define illness severity & mortality risk based on physiology, laboratory and therapy data for first 12 hours of newborn admission. Following IRB-approved parental consent, blood samples were collected from infants diagnosed with NEC (Bell's stage≥stage 2 or 3), SIP and matched controls. Circulating IAI levels were quantified using competitive ELISA. Spearman correlation was performed at a 0.05 significance level.

Summary of Results A total of 55 infants (14 with NEC, 13 with SIP and 26 matched controls) were included. Circulating IAI levels were inversely correlated with SNAPPE-II scores in neonates with NEC, SIP and matched controls ($r=-0.32$, $p<0.05$).

Conclusions Circulating levels of IAI inversely correlate with predictive model for illness severity and mortality in neonates. As a biomarker, IAI may assist predicting and detecting NEC earlier in at-risk infants assessed by the combined physiologic and perinatal score.



Abstract 321 Figure 1 Circulating IAI inversely correlated with SNAPPE-II scores

322 GENETIC ASSOCIATION OF THE GLYCINE CLEAVAGE SYSTEM GENES AND MYELOMENINGOCELE

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10.1136/jim-2015-000035.321

Purpose of Study Neural tube defects (NTDs) are one of the most common congenital birth defects. Myelomeningocele (MM) is the most common and severe form of open NTD compatible with life. Folate metabolism has been strongly associated with NTDs as seen by the reduction in occurrence with maternal folic acid supplementation. The mechanism involved in this association is still unclear. Recent studies have shown a link between mitochondrial folate one-carbon metabolism and NTDs. A specific component of mitochondrial FOCM is the glycine cleavage system (GCS) which breaks down glycine to donate one-carbon units to the cytoplasm. Narisawa et al (2012) found mutations in multiple genes comprising the GCS. Animal models have shown that lack of aminomethyltransferase (*Amt)* gene activity increases the risk of NTDs. The contribution of mutations in GCS genes (including the *AMT* gene) to MM risk in humans is largely unknown. It is hypothesized that single nucleotide polymorphisms (SNPs) and novel variants found within the coding regions of the glycine cleavage system genes are associated with an increased risk for the development of MM.

Methods Used A cohort of 864 patients was used to select 96 patients with MM born before US mandated folic acid fortification of food crops in 1998. Forward, reverse, and sequencing primers were designed for PCR amplification of the nine exons of the *AMT* gene that were sequenced to identify known and novel variants by the Sanger sequencing method. The generated sequences have been analyzed using the Sequence Analysis Software v5.1. Fisher's Exact test will be used to examine the association of SNPs with MM risk. An additional 500 NTD patients have been selected for a whole exome sequencing project to examine the four key enzymes in the GCS.

Summary of Results We have identified seven new variants in the *AMT* gene: one missense (p.R318Q), one silent (p. S77), one within an intron, one 5'-UTR, one 3'-UTR, and two in the promoter region. The p.R318Q is predicted to be deleterious to AMT function.

Conclusions We have identified novel variants in the GCS genes of patients in this study that may contribute to MM. Consistent with previous findings, this study provides support that genetic variations in genes of the GCS contribute to the risk of NTDs.

323 SINGLE CENTER REVIEW OF OUTCOMES FOLLOWING ADMINISTRATION OF ANTITHROMBIN III DURING NEONATAL EXTRACORPOREAL MEMBRANE OXYGENATION

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10.1136/jim-2015-000035.322

Purpose of Study Management of coagulation in neonates undergoing ECMO requires continuous monitoring of pro- and anti-thrombotic factors. Antithrombin III (AT3) functions as a negative regulator of multiple pro-coagulant factors and its activity is significantly increased in the presence of heparin. The aim of this study is to test the hypothesis that infusion of AT3 during neonatal ECMO prolongs the lifespan of the first ECMO circuit, reduces blood product and heparin administration, and decreases thrombotic complications.

Methods Used Routine administration of AT3 during neonatal ECMO was initiated in 2009 as a part of our anticoagulation protocol. We reviewed 162 patient records to compare the outcomes of patients undergoing routine AT3 replacement (n=72) with patients receiving standard anti-coagulation therapy (n=90) during ECMO therapy. All neonates undergoing ECMO in the neonatal intensive care unit at Georgia Regents University were eligible for study inclusion. Neonates who received ECMO therapy for primary cardiac support were excluded. Statistical analysis of patient cohorts was performed using SAS 9.4 and alpha was set at <0.05.

Summary of Results The longevity of the first ECMO circuit did not differ between neonates receiving AT3 replacement and the control population (155.2±70.8 vs. 141.7±67.4 hours, $p=0.55$). However, neonates undergoing routine AT3 infusion during ECMO required less total blood product infusion (67.4±34.9 vs. 54.7±20.1 ml/kg/d, $p<0.005$) and more heparin (660±260 vs. 730±170 units/kg/d, $p<0.05$) in comparison to the control cohort. Further, neonates in the routine AT3 replacement cohort experienced significantly fewer circuit thrombotic complications including "mechanical clots oxygenator" (41.7% vs. 6.9%, $p<0.0001$), "mechanical clots bladder" (55% vs. 17.3%, $p<0.0001$), and "mechanical clots other" (71.7% vs. 44.8%, $p<0.01$). Surprisingly, we observed a nonsignfiicant downward trend in hemorrhagic complications in infants receiving AT3 replacement when compared with control patients.

Conclusions These historical data provide compelling evidence that routine AT3 administration in neonates receiving ECMO support improves circuit maintenance and reduces thrombotic/hemorrhagic complications in the ECMO circuit and may limit this risk in patients.

324 GLUCOSE-6-PHOSPHATE DEHYDROGENASE DEFICIENCY IN DICHORIONIC-DIAMNIOTIC TWINS

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Case Report G6PD deficiency is the most common x-linked enzyme defect worldwide[1,2]. It is infamous for acute hemolytic crises and in the neonate can result in severe hyperbilirubinemia. Usually, a trigger induces the hemolytic crisis[2,4]. It is reported to affect 11–13% of African Americans[4]. In the literature, two case reports demonstrated G6PD deficiency in infants of multiple gestation without family history[3,4]. This case will discuss di-di African American twin males who presented in the first week of life with hemolytic anemia and severe hyperbilirubinemia. The infants were born at 34 WGA to a 32

year-old G3P3 mother, with good prenatal care, who presented for c-section due to oligohydramnios, poor BPP and breech position in Twin B. Rupture of membranes occurred at delivery. The infants required PPV and CPAP at delivery. Initial labs obtained did not demonstrate signs of infection and the infants were monitored off antibiotics. Twin A presented with hyperbilirubinemia requiring phototherapy at DOL 4 and ultimately required double volume exchange transfusion. Twin B required phototherapy starting at DOL 4 that was responsive to aggressive phototherapy. Workup for hyperbilirubinemia included, serum total IgM, urine for reducing substances, sepsis evaluation with negative blood and urine cultures, and G6PD levels. Both infants were found to have decreased G6PD enzyme. They were discharged by 3 weeks of age with hematology follow up. In the literature, there are few case reports of di-di twins with G6PD deficiency. Prematurity is a risk factor for hyperbilirubinemia[3]. Bilirubin levels peak around DOL 5, and decline over the following days.[4] These infants continued to have rapidly rising bilirubin levels despite aggressive phototherapy. With the work-up revealing hemolysis and ruling out ABO incompatibility, sepsis, and galactosemia, other causes were sought. The infants' were breastfed; therefore, a careful maternal history was sought with no revelation of known hemolytic triggers. Diagnosis was confirmed with low levels of G6PD. With risk of bilirubin encephalopathy and kernicterus, therapy should be aggressive for severe hyperbilirubinemia, while the cause is investigated.[1 2 3 4 5] In conclusion, in high risk populations, G6PD deficiency should be high on the index of suspicion.

325 NEONATAL ACUTE KIDNEY INJURY AND THE RISK OF INTRAVENTRICULAR HEMORRHAGE IN THE VERY LOW BIRTH WEIGHT INFANT

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Purpose of Study We hypothesized that infants diagnosed with acute kidney injury (AKI) have an increased risk of intraventricular hemorrhage (IVH) independent of gestational age and other variables associated with both AKI and IVH.

Methods Used This prospective cohort study was consisted of 125 infants with birth weight (BW) ≤1200 g and/or gestational age (GA) ≤31 weeks. A modified definition of AKI was used from KDIGO, not including urine output as non-oliguria is common in this population. SCr was obtained on days 1, 2, 3, 4, and 12 on most infants. Baseline SCr was defined as the lowest previous SCr value. Stage 1 AKI was defined with a rise≥0.3 mg/dl or 150% rise from baseline; Stage 2≥200% rise; Stage 3≥300% rise. IVH was based on head ultrasounds at the end of week 1 and 4 of life, bi-monthly thereafter if grade 3 or 4 was detected.

Summary of Results AKI within the first 15 days of life was documented in 36/118 (30.5%) infants and IVH was found in 35/118 (28%). Those with AKI had a higher trend towards also having IVH compared to those without [(14/36 (39%) vs. (21/82 (25.6%) p=0.1]. Infants with AKI were more likely to have stage 2 IVH or higher than those without AKI [(11/36 (30.5% vs. 6/82 (7.0%); p<0.01].

Conclusions No association was noted between AKI and IVH overall, but we did find that those with AKI had a 3 times higher hazards ratio to develop grade 2 or higher IVH. Further studies are indicated to expand sample size and to allow control for more variables, including various markers for sepsis or multi-organ damage that was not screened in this study.

Crude and adjusted* hazard ratios (HRs) and associated confidence intervals (CIs) for the association between acute kidney injury (AKI)† and intraventricular hemorrhage (IVH)

Abstract 325 Table 1

	N (Risk %)	Crude HR (95% CI)	Adjusted HR (95% CI)
IVH Grade			
≥ 1	35 (29.7)	1.48 (0.70–3.14)	1.42 (0.66–3.04)
≥ 2	18 (15.3)	3.29 (1.25–8.64)	2.98 (1.12–7.91)
≥ 3	13 (11.0)	3.90 (1.23–12.34)	3.50 (1.08–11.39)

* Estimated from a Cox proportional hazards regression and adjusted for birth weight, antenatal steroid use, and APGAR score
† AKI entered into model as a time-dependent covariate

326 NEURALLY ADJUSTED VENTILATORY ASSIST AND NEED FOR SEDATION IN THE NEONATAL INTENSIVE CARE UNIT

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Purpose of Study Neurally adjusted ventilatory assist (NAVA) is a novel method of mechanical ventilation for newborns. Studies have shown that this method can lead to improved patient-ventilator synchrony and comfort. We hypothesized that the use of NAVA ventilation in chronically ventilated infants would result in a decreased need for sedative medication.

Methods Used We retrospectively examined the use of sedatives in thirteen infants in the neonatal intensive care unit at Children's of Alabama who were ventilated with NAVA. Each occasion for NAVA use that was analyzed was for≥10 days duration. The primary outcome was the difference in measured dosage of intravenous fentanyl required before, and then 10 days after starting NAVA ventilation. The Wilcoxon Matched Pairs Signed Rank Test was used for statistical comparison of median dosage requirements with an alpha of 0.05.

Summary of Results Ten chronically ventilated infants required NAVA for greater than 10 days during the period of 2010 - 2013. These infants had a median gestational age of 24 weeks at delivery and a mean birth weight of 580 g. There were 13 occasions when NAVA was used for≥10 days in a total of 10 infants. The median dose of fentanyl

at day 0 was 51.1 microgram/kg/day and was reduced to 0 microgram/kg/day by 10 days later. This reduction in median fentanyl dose was found to be significant ($p<0.05$). In 10 of 13 occasions where fentanyl was used the infant was completely weaned off fentanyl by day 10. All ten of these infants remained on oral methadone. Of the 10 infants studied, 3 remained admitted, 4 died, and 3 were discharged or transferred to long term pulmonary pediatric unit at the time of the study. At the time of death or discharge, all 10 infants continued to have an oxygen requirement and 7 had tracheostomy placement.

Conclusions The use of NAVA in chronically ventilated infants was associated with a decrease in intravenous fentanyl use after ten days. A randomized clinical trial is needed to further validate this finding.

327 DOES THE RELATIONSHIP BETWEEN LATE PRETERM BIRTH AND HEALTHCARE UTILIZATION DIFFER BY RACE?

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Purpose of Study Black infants are more likely to be late preterm (34–36 weeks) than white infants. Late preterm infants have increased health care utilization but it is unclear if this increased utilization varies by race. The objective was to examine if the relationship between late preterm delivery and increased healthcare utilization differs by race.

Methods Used This retrospective cohort study using Medicaid claims data linked to birth certificates included all live, singleton births in Missouri with 6 months of continuous Medicaid coverage from 2000–2005. We excluded infants who were not identified as White or Black. The primary predictor was late preterm (34–36 weeks). The outcome was healthcare utilization in the first year of life, a count of healthcare encounters (office, hospital, emergency, or other). T-tests and multivariate Poisson regressions were used for analyses.

Summary of Results 10.9% of White infants were late preterm (46,751 term; 5,752 late preterm) and 16.2% of Black infants were late preterm (16,730 term; 3,202 late preterm). Race was a significant predictor of all healthcare utilization. The mean number of office visits was lower for Black late preterm infants (5.9) versus White late preterm infants (7.6). After adjusting for maternal age, infant gender, and infant birth weight, late preterm infants in both races were more likely to have more of all categories of healthcare utilization ($p<0.01$). White late preterm infants were 3.4 times more likely to have more hospital visits than White term infants ($p<0.001$). Black late preterm infants were 2.7 times more likely to have more hospital visits than Black term infants ($p<0.001$).

Conclusions The proportion of late preterm birth was higher in Black versus White infants. Healthcare utilization was lower in Black late preterm infants versus White late preterm infants. It is unclear if this reflects a disparity in healthcare access.

Table. Health Care Utilization in Late Preterm versus Term Infants Stratified by Race*

	Office	Emergency Room	Hospital	Other
White				
Term	7.4 (±4.7)	1.1 (±2.0)	1.2 (±5.1)	2.3 (±4.3)
Late preterm	7.6 (±4.9)	1.3 (±2.3)	4.2 (±10.8)	3.4 (±7.1)
Poisson regression† – β estimate	0.11	3.4	0.43	1.0
Black				
Term	5.7 (±4.4)	0.9 (±1.6)	1.2 (±5.1)	2.9 (±4.7)
Late preterm	5.9 (±4.4)	1.0 (±1.7)	3.0 (±8.5)	3.3 (±6.6)
Poisson regression† – IRR††	0.05	2.7	0.19	0.33

*All statistically significant, $p<0.01$; †Adjusted for age, gender, and birthweight; ††Interval Rate Ratio

Abstract 327 Figure 1

328 COMPARISON OF OUTCOMES OF TWO MODES OF HYPOTHERMIA FOR NEONATAL ENCEPHALOPATHY

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10.1136/jim-2015-000035.327

Purpose of Study Therapeutic hypothermia (TH), selective (SC) or whole-body (WC), has become a standard therapy for newborns with qualifying neonatal encephalopathy (NE). Clinical trials have shown this to be a safe and effective therapy. Adverse events like bradycardia with cardiac compromise and coagulation disorders have been associated with both types of TH. Other problems like pulmonary hypertension, increased risk for sepsis, renal failure, etc can occur but are not clearly linked to TH. It is unclear if one mode of TH is superior compared to other. We proposed to review our data comparing SC and WC for NE.

Methods Used Database review identified neonates with NE who had undergone TH from 2009 to 2014. Records of infants with TH were reviewed from our two NICUs.

Abstract 328 Table 1 Baseline data

Variable	Body Cooling (n=25)	Head Cooling (n=20)	Body+Head Cooling (n=45)	p-value
Maternal Age (yrs)	25.3 +–5.6	25.56 +– 5.7	24.9 +– 5.3	0.33
Gestational Age (wks)	38.2 +– 1.8	37.6 +– 1.8	37.9 +– 1.8	0.28
Birthweight (kg)	3.34+–1.03	2.97 +– 0.54	3.13 +– 806.8	0.13
Apgar <5 at 5 min	16 (80%)	21 (84%)	37 (82%)	0.73
Worst pH <60 min	6.89 +– 0.18	6.91 +– 0.20	6.90 +– 0.19	0.73
Worst BE <60 min	–20.77 +– 6.87	–18.17 +– 5.19	–19.46 +– 6.15	0.20
Cooling start (hrs)	3.55 +– 1.47	3.74 +– 1.63	3.65 +– 1.54	0.69
Seizures	12 (60%)	20 (80%)	32 (71%)	0.14

Data was recorded from hospital stay and from follow up clinic (6–36 months). IRB approval was obtained prior to beginning study.

Summary of Results 45 babies qualified for our study. 20 were treated with WC (grp 1) and 25 with SC (grp 2). Initial presentation was similar in the two groups (table 1). Systemic effects of cooling therapy were similar in 2 groups. 40% of WC required gastrostomy tube compared to 16% of SC (p=.07), also abnormal HUS was found more in WC (85 % vs 38%, p<.05)) though subsequent abnormal brain MRI were similar (72% vs 63%) in both groups. Death or neuro exam at discharge were not different in 2 groups (65% vs 68%). 33/45 (73%) patients had follow up data (6–36 months) which did not show any difference for death or abnormal neurologic findings. LBW (<2.5 kg) infants were more likely to have abnormal neurologic exam or death at followup exam.

Conclusions Inspite of TH, death or disability continues to be a significant problem in infants with NE. There are no differences in outcomes between SC and WC. Infants in TBC group had higher rate of G-tube feedings which needs to be investigated further.

329 SURFACTANT PROTEIN D IS PRESENT IN THE RETINA AND MODULATES NEOVASCULARIZATION

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Purpose of Study Retinopathy of prematurity (ROP) is the leading cause of acquired childhood blindness. The collectin, Surfactant Protein D (SP-D) has an important role in innate immunity via regulation of inflammatory signals. SP-D has been shown to up-regulate vascular endothelial growth factor (VEGF) through toll like receptors (TLR) 2 and 4 in various tissues in response to inflammation. We have previously demonstrated that up-regulation of Surfactant Protein A (SP-A) is associated with neovascularization (NV) in C57BL/6J (WT) mice. We therefore *hypothesize* that the related collectin, SP-D is present in the mouse retina and is up-regulated by TLR-2 and 4 ligand activation. Furthermore, SP-D will increase NV in the mouse retina.

Methods Used Our first aim was to determine the localization of SP-D in the mouse retina in relation to blood vessels by immunohistochemistry (IHC) using anti-SP-D and anti-CD31 (endothelial cell) antibodies. ELISA was used to quantify expression of SP-D in mouse retinas from P0-P48. Our second aim is to demonstrate that retinal SP-D protein will be up-regulated *in vivo* by intravitreal injection of TLR 2 and 4 ligands in WT mice. Our last aim is to determine the effect of SP-D on NV using the oxygen-induced retinopathy model in WT and SP-D$^{-/-}$ mice. SP-D$^{-/-}$ genotype is being confirmed by PCR.

Summary of Results IHC demonstrated that SP-D is more prominent at the optic nerve in proximity to the central retinal artery at P0 as well as along the choroidal blood vessels. Expression then increases peripherally to more distal areas of the retina until adulthood (P48). SP-D protein concentration increases in the retina from P0 to P5 as demonstrated by ELISA (p<0.05). After a slight decrease till P10, expression remains unchanged till adulthood. Expression of pulmonary SP-D protein increases from P0 to P17 (p<0.05) and then remains stable till P48. Generation of SP-D$^{-/-}$ mice lacking retinal degeneration has been confirmed using PCR genotyping.

Conclusions Our research project is still in progress. However, our data confirms that retinal SP-D is present at the optic nerve head at birth and develops in association with retinal vasculature. Furthermore quantitative increase in expression increases over the first few weeks of life. Therefore, SP-D along with SP-A, may have a significant impact on ROP in preterm newborns.

330 CHANGES IN PRETERM INFANT MORTALITY RATE AMONG BLACK AND WHITE POPULATIONS FROM 1995 TO 2009 IN THE UNITED STATES

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Purpose of Study Racial disparities in preterm birth (PTB) rate have narrowed in the recent years. Contrary to this, racial disparity trends in infant mortality rate have widened. Our hypothesis is that less reduction in preterm mortality in Black infants in the recent years when compared to Whites have contributed to these differences.

Methods Used The birth cohort data from the National Center for Health Statistics Linked Birth/Infant Death Cohort Files were used to evaluate the gestational age-specific mortality from 1995 to 2009. Eligible: Infants born at 20 to 36 weeks gestation (total of nine subgroups in 2 week intervals) and greater than 500 grams. Multivariable logistic regression with relative odds ratio (RORs) and 95% confidence interval (CI) were used to examine changes in disparities in PTBs.

Summary of Results There was higher proportion of Black infants at the lowest gestational age (≤ 28 weeks, 34% Black vs. 46.5% White;≤37 weeks, 22.6% vs. 54.4%; when compared to all live births,15.7% vs. 61.2%) Image below shows pattern of decreasing survival advantage in

Completed weeks gestation (2 week interval)	Odds Ratio (95% CI)*		Relative Odds Ratio (ROR)**
	1995 -1998	2006 - 2009	
20 – 21 (n = 9,854)	0.60 (0.50-0.85)	0.71 (0.59-0.85)	1.19
22 – 23 (n = 47,957)	0.57 (0.53-0.62)	0.63 (0.58-0.68)	1.09
24 – 25 (n = 102,180)	0.67 (0.63-0.71)	0.83 (0.79-0.88)	1.25
26 – 27 (n = 145,809)	0.86 (0.80-0.91)	1.03 (0.95-1.08)	1.18
28 – 29 (n = 210,824)	0.86 (0.80-0.93)	1.04 (0.97-1.12)	1.21
30 – 31 (n = 386,507)	0.89 (0.83-0.96)	1.04 (0.96-1.12)	1.17
32 – 33 (n = 835,533)	0.93 (0.86-1.00)	1.02 (0.95-1.10)	1.1
34 – 35 (n = 2,324,964)	1.02 (0.95-1.08)	1.14 (1.07-1.21)	1.12
36 – 37 (n = 2,527,298)	1.35 (1.25-1.45)	1.45 (1.34-1.56)	1.07

* Comparing Black to White infants
** ROR of greater than one indicates increase in disparity over time. Shading indicates significant OR's and ROR's.

Abstract 330 Figure 1 Comparing Mortality among Black and White Infants

Black infants for all gestational age groups except that there was no change for 32–33 or 36 weeks.
Conclusions Black infants are at a higher risk of being born preterm when compared to White infants, and the risk increases significantly as the gestational age decreases. The surivival advantage of PTB Black infants compared to Whites have declined over time and this may contribute to the lack of decline in racial disparities in the overall infant mortality rate.

331 STRUCTURAL RACISM AND PRETERM BIRTH IN LOUISIANA

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Purpose of Study Structural racism is the systematic exclusion of people of color from access to resources and opportunities including employment and education. It is an increasingly hypothesized driver of racial disparities in health outcomes, including preterm birth. The purpose of this analysis was to quantify the effects of structural racism on risk of preterm birth among Black and White women in Louisiana.
Methods Used Birth records in the state of Louisiana from 2011–2012 were geocoded and linked to county-level indicators of structural racism derived from the US Census Bureau's American Community Survey. Indicators were defined as the ratio of Blacks to Whites in each county who had (1) attained a bachelor's degree or higher for the population age 25 and older and (2) were currently employed for the population age 18 and older. Indicators were dichotomized at the median to categorize counties as having a high or low degree of structural racism. Generalized estimating equations estimated the risk of preterm birth associated with living in a county with a high degree of structural racism controlling for individual-level confounders (age, insurance, education, and smoking, alcohol, and drug use during pregnancy). Tests for interaction by maternal race were used to assess whether the impact of structural racism on preterm birth is specific to Black or White women.
Summary of Results Across all counties, the proportion of Backs with at least a bachelor's degree was on average half that of Whites. Although more equitable, Blacks were also underrepresented in employment across the state where the proportion employed was 0.92 times lower than that of Whites. After adjustment, large racial inequality in educational attainment was associated with a 14% increased risk for preterm delivery (relative risk=1.14, 95% confidence interval=1.00, 1.27) and there was no association with large inequality in employment. Non-significant interaction terms suggested the impact of structural racism was equally detrimental to White and Black women in the county.
Conclusions Living in a county with a high degree of structural racism in education may increase risk for preterm birth among all women.

Pulmonary and Critical Care Medicine Joint Plenary Poster Session and Reception 4:00 PM Thursday, February 18, 2016

332 EFFECTIVENESS OF A SEVERITY SCORE TO ADJUST HIGH FLOW NASAL CANNULA IN PATIENTS WITH BRONCHIOLITIS

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Purpose of Study Bronchiolitis is a common lower respiratory tract infection that affects young children and infants. High-flow nasal cannula (HFNC) can help decrease the overall respiratory effort in these patients. We implemented a protocol using a severity scoring tool for respiratory distress called the Modified-Tal score with the goal of decreasing hours on HFNC and length of stay in the Pediatric Intensive Care Unit (PICU).
Methods Used This project included a retrospective and concurrent chart review. Children aged birth to two years old admitted to our PICU with the diagnosis of bronchiolitis and required HFNC were included. These patients were scored every 2 hours by nursing and repsiratory therapist using the Modified-Tal Severity Tool, a previously validated severity scoring tool for respiratory distress.
Summary of Results There were 76 subjects in the retrospective group and 73 subjects in the concurrent group. Median (IQR) age of study participants was 3.0 (1.0, 10.0) months. The proportion of subjects requiring intubation was similar for both groups with 15% (11/76) observed in the retrospective group and 14% (10/73) in the concurrent group (p=0.8919). Median HFNC duration was higher in the retrospective group, 43.0 hrs (20.0, 66.9), than in the concurrent group, 39.6 hrs (20.7, 58.7), but the difference was not significant (p=0.5185). There was no evidence to suggest median PICU length of stay (LOS) differed significantly between the retrospective and concurrent groups (65.5 hrs and 65.0 hours respectively, p=0.6337). No significant association was seen in the robust regression models between group (retrospective/concurrent) and HFNC duration or PICU LOS while controlling for age and intubation status (p=0.4905 and p=0.4617, respectively).
Conclusions The Modified-Tal tool can be used to adjust HFNC in pediatric patients with bronchiolitis and standardize the way in which this therapy is utilized, however there was no statistical evidence to suggest implementation of the severity tool significantly reduces HFNC duration or PICU LOS.

333 ACUTE LIVER FAILURE FOLLOWING HEAT-RELATED INJURY IN A FOOTBALL PLAYER

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Introduction Heat illness is a major concern in pediatrics, especially in athletes living in warmer climates. As a result, heat related illness is a problem that all who are involved in pediatric emergency, intensive and primary care should be aware of. Consequences of heat damage include encephalopathy, renal failure, shock, hepatic injury and coagulation disorders. Although, initial treatment of heat illness focuses on lowering core body temperature, patients may experience significant and severe issues post normothermic conversion.

Case Report A 14 year old male, with no significant past medical history, was admitted to the Pediatric Intensive Care Unit (PICU) following a collapse at football practice in the early summer. He was rapidly cooled due to hyperthermia, and intubated by paramedics. On arrival to the PICU, he was extubated and within a few hours returned to his baseline neurological status. His physical exam was unremarkable except for his obese body habitus. Initial labs showed mildly elevated renal and cardiac markers, along with normal transaminases and coagulation studies. On day 2, his transaminases started to increase, while his cardiac and renal function improved to baseline. An abdominal ultrasound did not show any acute pathology. Despite his clinical status improving, by day 3, his aspartate aminotransferase (AST) and alanine aminotransferase (ALT) had increased to 4050 and 4815 respectively. His coagulation profile showed a prothrombin time (PT) of 28.6 seconds and international normalized ratio (INR) of 2.5, suggestive of the diagnosis of acute liver failure. He was subsequently transferred to a tertiary liver transplant center. Ultimately, he did not require a liver transplant and within a few days his transaminases trended down to AST 118 and ALT 827, along with an improved INR of 1 and PT of 10.9.

Conclusion The above case highlights the importance of close monitoring of patients with heat-related injury despite clinical improvement. The hepatic system is a major producer of heat and is at risk, during heat illness, of reaching some of the highest temperatures in the body with major potential for damage. Hepatic function should be monitored frequently in cases of heat-related injury regardless of overall clinical recovery.

334 THE DEVELOPMENT OF AN INTEGRATED ASTHMA CLINICAL PATHWAY AT THE CHILDREN'S HOSPITAL AT OU MEDICAL CENTER

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Purpose of Study The effect of clinical pathways on patient care have been well established in the literature; improvements include better compliance with national care standards, decreased length of stay and hospitalization costs, and a standardized approach to patient evaluation and treatment. Prior to this project, The Children's Hospital at OU Medical Center did not have a standardized approach to asthma care between the emergency department (ED), inpatient floors, and pediatric intensive care unit (PICU).

Methods Used A multidisciplinary team was assembled, including hospitalist, PICU, ED, and pulmonology faculty, hospital nursing, and respiratory therapy (RT) leaders. Collaboratively we established a standardized multi-phase approach including initial ED management, duration of ED monitoring, criteria for inpatient versus PICU admission, clinical pathway medication dosing and spacing, and transfer and discharge criteria from all represented hospital areas. This standardized approach is driven by the Pediatric Asthma Score (PAS) and RT assessment.

Summary of Results Attending physicians, residents, and RT staff are currently receiving education on the IACP and PAS systems. Order sets have been created to co-exist with the clinical pathway. IRB approval is pending for an extensive retrospective cohort evaluation pre- and post- pathway implementation.

Conclusions This collaborative group successfully created an IACP, and care providers are now receiving education with widespread implementation expected starting October 2015. We expect to see improvement in the quality and standardization in the approach to care received by asthmatic patients seen in our facility as has been demonstrated at other institutions after implementing similar pathway strategies.

335 ACUTE PULMONARY NOCARDIAL INFECTION SUPERIMPOSED ON CHRONIC RELAPSING GRANULOMATOSIS – A SIGNIFICANT DIAGNOSTIC CHALLENGE

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Introduction *Nocardia* species are Gram positive aerobic bacteria. Immunocompromised patients are at greatest risk of infection. The main challenge with Nocardiosis is diagnosis. The rarity of this infection can lead to misdiagnosis. We report a case of acute pulmonary nocardial infection in a patient with chronic relapsing granulomatosis with polyangiitis. The overlapping presentation and imaging findings made diagnosis a challenge.

Case presentation A 76 years old woman with hx of granulomatosis on maintenance dose of prednisone came with hemoptysis of 5 days, with no fever, and negative PPD. Chest X-ray showed bilateral lung infiltrates. CT with IV contrast showed lung infiltrates with right pleural effusion. Blood culture was negative. She was started with broad spectrum antibiotics. CRP was 18, antimyeloperoxidase was 6.5, antiproteinase was negative. Bronchoalveolar lavage was negative for viral, fungal and bacterial cultures and malignancy. High dose methylprednisone and mycophenolate was started with impression of flare up. However, respiratory distress and hemoptysis worsened; patient was transferred to the MICU and intubated. Repeat CT showed worsening of lung infiltrate. Repeat BAL culture grew branching Gram positive rods, isolates of Nocardia asiatica. Imipenem and ciprofloxacin antibiotics were started. However, patient's condition deteriorated, and she passed away.

Discussion Pulmonary nocardiosis may mimic an exacerbation of known chronic lung disease. This situation had been described for chronic obstructive pulmonary disease and pulmonary sarcoidosis. The presence of such coexisting diseases may delay diagnosis of nocardial infection. The onset of pulmonary nocardiosis may be acute, subacute, or chronic and is not distinguished by any specific signs or symptoms. Due to the nonspecific and diverse clinical presentation and the inherent difficulty in cultivating *Nocardia*, delay in establishing diagnosis is common with fatal outcome. Our case highlights the importance of strong index of suspicion to minimize preventable negative outcomes.

336 CAMOUFLAGING AS ACUTE CHEST SYNDROME

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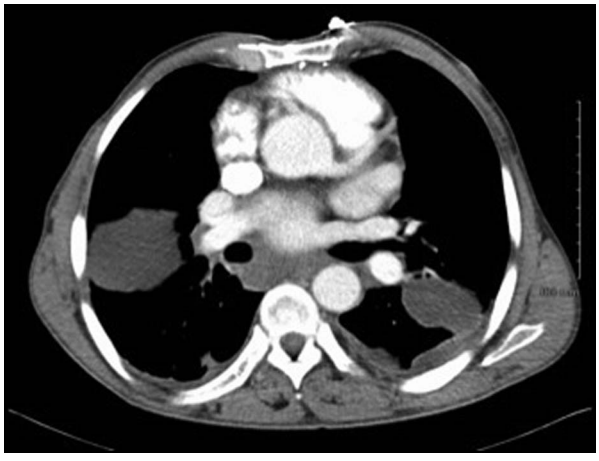
10.1136/jim-2015-000035.335

Case Report A 62 year old man with Sickle cell disease, mitral valve replacement and chronic obstructive pulmonary disease presented with shortness of breath on exertion. Chest roentgenogram (CXR) showed bilateral infiltrates with multifocal airspace opacities (Fig1). He was found to have HemoglobinS (HbS) of 72.3%. Patient was maintaining oxygen saturations >90% on nasal cannula, had a low grade temperature with negative blood cultures. He was admitted three months prior with similar symptoms and CXR findings when he was diagnosed with acute chest syndrome. At that time he received an exchange blood transfusion to decrease his HbS from 68% to 20%. Critical care consultation was requested this visit to determine need for an exchange transfusion. Computed tomography (CT) of the chest was obtained to further delineate nature of opacities as his clinical picture was not consistent with a diagnosis of acute chest syndrome. CT showed fluid collections in the minor and major fissure bilaterally consistent with bilateral pseudotumors (Fig 1) with clear lung parenchyma. The patient was then given diuresis and all of the CXR opacities resolved as did his symptoms. A traditional treatment of acute chest syndrome with fluid resuscitation would have worsened symptoms and an exchange transfusion, while leading to mild improvement in symptoms, would have been unable to correct the underlying pathology. Hence in patients with valvular disease/ cardiac dysfunction with sickle cell disease (when the clinical picture does not fit CXR), it is important to evaluate a broad differential diagnosis in addition to acute chest syndrome.



Abstract 336 Figure 1

337 THORACIC SPLENOSIS RESEMBLING METASTATIC DISEASE

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10.1136/jim-2015-000035.336

Case Report A 57 year old man sustained a shotgun wound to left abdomen in 1973. Forty-one years later, he developed active pulmonary tuberculosis which was diagnosed at a correctional facility. A CT scan at that time revealed a cavitary lesion in the left upper lobe, multiple left sided pleural based nodules, multiple ballistic fragments across the left abdomen and diaphragm, and an absent spleen. PET scan showed borderline hypermetabolic activity in the left pleural base and hypermetabolic activity in a LUL pleural based lesion. This suggested an infectious process, although the pleural based lesions were not consistent with active tuberculosis. IR guided biopsy of a left upper lobe lesion revealed mixed inflammation including scattered macrophages with hemosiderin deposition, fibrosis, and vascular proliferation. There was no evidence of malignancy. He was started on RIPE therapy for active tuberculosis, but presented to the hospital two months later with transaminitis. Repeat CT imaging revealed the previously reported findings and also noted traumatic changes to the left diaphragm. Thoracic splenosis was suspected based upon the history of splenic and diaphragmatic trauma, the biopsy results, and imaging studies. The patient was appropriately treated for RIPE induced transaminitis. Subsequent nuclear medicine liver-spleen scan obtained with Technetium-99 m revealed extensive thoracic and subcutaneous splenosis.

Discussion Splenosis is defined as autotransplantation of splenic tissue to different anatomic sites throughout the body. Splenosis can be seen in distant sites via endovascular spread or through direct, mechanical seeding of viable splenic tissue. Abdominal splenosis is the most common form and is more likely to develop after blunt trauma to abdomen or via splenectomy. Simultaneous splenic and diaphragmatic injury from blunt force trauma or penetrating injury may result in thoracic splenosis. Splenosis is often an asymptomatic and benign condition. If not suspected, it can often lead to unnecessary investigation to differentiate it from neoplastic or other processes. Thoracic splenosis should be suspected in patients with pleural based nodules and a history of splenic and diaphragmatic trauma.

338 THE EFFECT OF A SEDATION SCORING TOOL ON UNPLANNED EXTUBATIONS IN A PEDIATRIC INTENSIVE CARE UNIT

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10.1136/jim-2015-000035.337

SBS Score	Description
+2	Agitated
+1	Restless and difficult to calm
0	Awake and able to calm
-1	Responsive to gentle touch or voice
-2	Responsive to noxious stimuli
-3	Unresponsive

Abstract 338 Figure 1

Purpose of Study Unplanned extubations (UE) in the Pediatric Intensive Care Unit (PICU) are a hazard to patient safety. Extubations without patient readiness can result in hypoxemia, tracheal injury and even death. Based upon previous observational data, we observed that some intubated patients were inadequately sedated prior to UEs. In response, we implemented a sedation scoring tool, the State Behavioral Score (SBS), in the PICU at Children's Hospital at OU Medical Center. We hypothesized that implementation of the State Behavioral Scale would decrease the incidence of UEs in the PICU.
Methods Used This was a prospective, observational study in a 25-bed PICU including all intubated pediatric patients from January 1, 2011 to September 30, 2012. Data was collected to determine the rate and causes of unplanned extubations as well as the sedation score of those who extubated.
Summary of Results There were 67 unplanned extubations for a rate of 1.3 unplanned extubations per 100 ventilated days. Of the 67 unplanned extubations, 30 occurred before implementation of the SBS, 10 occurred during the training period for the SBS, and 27 occurred after implementation of the SBS. There was no statistical difference of UE before and after the SBS training period ($p=0.81$).
Conclusions There are multiple factors leading to UE. While previous data led us to implement a sedation scoring tool, it is possible that this scoring tool is not the dominant factor in abating UEs. It is also possible, that the scoring tool implemented may 1) require further training to use reliably, 2) require more frequent use (at time of study assessed every 4 hours), 3) may not be the best tool for assessing sedation in a PICU. Subsequently, a chart review has been implemented to evaluate the SBS usage and further education regarding the SBS tool is underway. Data collection is ongoing to assess the effect of subsequent interventions.

339 SMALL BOWEL OBSTRUCTION COMPLICATED BY LAXATIVE INDUCED HYPERMAGNESEMIA

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10.1136/jim-2015-000035.338

Case Report Severe hypermagnesemia is an uncommon electrolyte abnormality and can have fatal consequences if not identified and promptly treated. 52 year-old female with insulin-dependent type 2 diabetes mellitus, hypertension, schizophrenia and stage 3 chronic kidney disease presented with a chief complaint of worsening, diffuse abdominal pain associated with five days of constipation unrelieved by over-the-counter magnesium containing laxatives. A computed-tomography scan of her abdomen revealed a small bowel obstruction (SBO) without transition point. The following day, she became somnolent and began vomiting. Due to the patient's declining mental status, she aspirated a significant quantity of the vomitus. She was intubated and transferred to the intensive care unit where a previously undiagnosed hypermagnesemia was discovered at 6.8 mg/dL (normal range 1.7–2.5) with an ionized calcium of 0.88 mmol/L. The patient was urgently placed on continuous veno-venous hemofiltration (CVVH) in attempt to correct her electrolyte imbalances. An electrocardiogram (ECG) revealed sinus tachycardia with a normal QRS complex. Her electrolyte imbalances and acute renal failure resolved on CVVH. Additionally, her SBO resolved with supportive care. In patients with impaired renal function or delayed intestinal transit time, overuse of magnesium containing medications can cause an insidious rise in serum magnesium levels. The initial presentation can include drowsiness, flushing, headache and diminished deep tendon reflexes, may become apparent with plasma concentrations exceeding 4.8 mg/dL. As concentrations rise, other deleterious effects such as hypotension, ECG changes (widened QRS complex, bradycardia and complete heart block), hypocalcemia and respiratory failure may occur. This patient exhibited drowsiness, hypotension, hypocalcemia and bradycardia with no evidence of AV node or intra-ventricular conduction delays. Early identification of this electrolyte abnormality is crucial and initiation of appropriate therapy should be prompt so that magnesium and calcium levels can be normalized and fatal consequences can be avoided. For patients with adequate renal function, cessation of the offending agent may be sufficient. In more severe cases, hemodialysis may be the only option for effective clearance.

340 A CASE OF ILD AS A CONSEQUENCE OF VOLATILE ANESTHETIC EXPOSURE

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10.1136/jim-2015-000035.339

Case Report An uninsured 51-year-old Caucasian male with history of tobacco use and cervical stenosis, admitted for elective anterior cervical discectomy and fusion surgery. Perioperative course was uneventful. On postop day 3, the patient developed acute respiratory distress with hypoxemia requiring 50% oxygen to maintain O2 sat above 92%. Exam demonstrated diffuse inspiratory rales. ABG showed respiratory alkalosis and hypoxemia. Chest x-ray showed prominent interstitial markings. CT chest with IV contrast was negative for pulmonary embolus and showed diffuse ground glass opacities, not present on prior imaging. For concern of post-intubation aspiration versus hospital-acquired pneumonia, he was treated with appropriate antibiotics, which yielded no response. With unsuccessful course of antibiotics and continued presence of diffuse interstitial changes with features suggestive of developing fibrosis, the working diagnosis was interstitial lung disease. Chart review showed that Sevoflurane was the

anesthetic used perioperatively. No other exposures to medications associated with pneumotoxicity were noted. Trial of high dose steroids was unsuccessful and did not improve his hypoxemia. He remained hospitalized for the next 3 months, requiring continuous O2 with venturi mask while he underwent evaluation for lung transplant. He was noncompliant with mask placement, frequently removing his mask during his stay. Lung biopsy was not performed due to concern for ventilator weaning after intubation for procedure. After prolonged course, he developed acute worsening of hypoxemic respiratory failure and was found in PEA arrest, expiring after unsuccessful resuscitation.

Conclusion Sevoflurane is an extremely common volatile anesthetic that has not been previously associated with interstitial lung disease. It has been reported to cause an exothermic reaction during surgery when exposed to a carbon dioxide absorbent found in anesthesia delivery devices and has been linked to acute respiratory distress syndrome. However, literature is sparse with regard to the development of permanent diffuse lung parenchymal damage following exposure.

341 AMIODARONE- A RARE CAUSE OF EOSINOPHILIC PNEUMONIA!

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10.1136/jim-2015-000035.340

Case Report An 84yo man with HTN, CHF, A-fib, and PAD was admitted for his foot osteomyelitis. While initially stable on 2 L nasal canula oxygen he had cough, increasing shortness of breath and O2 requirement. CXR showed bilateral interstitial infiltrates and pleural effusions. CT chest showed bilateral ground glass opacities with consolidation and effusions. Pleural fluid showed eosinophilia. His CBC had a WBC of 7,000 with 18% eosinophils; C3 60 (88–201), C4 12 (18–55), BNP 600, ANA 0.5 (nl<1). Review of his history revealed treatment with amiodarone 200 mg daily for 2 years. Amiodarone induced eosinophilic pneumonia was suspected. Bronchoalveolar lavage (BAL) was attempted but aborted when the patient desaturated. The drug was stopped, high dose steroids started and non-invasive positive pressure ventilation was begun. His peripheral eosinophils promptly came down to 2% the next day and to normal within days. The patient's shortness of breath resolved and follow up CXR and CT scans showed notable improvement.

Discussion Amiodarone is the most widely prescribed anti-arrhythmic medication in the United States. However, it is known to cause significant side effects, making it a complicated drug to use safely. Pulmonary toxicity is one of the most serious side effects which can limit its use. Manifestations include interstitial pneumonitis, eosinophilic and organizing pneumonia, ARDS, alveolar hemorrhage and pulmonary nodules. Eosinophilic pneumonia, as seen in our patient, is rare and can present in acute and chronic forms. The chronic form is a subacute illness of cough, shortness of breath, eosinophilia, weight loss, fever and night sweats. CT chest typically shows diffuse, ground glass opacities. Other causes such as vasculitis, TB, fungal and parasitic infections must be ruled out. If amiodarone is felt to be the cause of the eosinophilic pneumonia, treatment includes cessation of the medication and high dose steroids. Although low doses of the drug are usually well tolerated, case reports, like ours, demonstrate that adverse effects can still occur. Physicians need to be cognizant of this uncommon pulmonary toxicity given the number of patients now being managed chronically with amiodarone. Proper diagnosis and prompt treatment of eosinophilic pneumonia can lead to rapid clinical improvement.

342 ELECTRONIC CIGARETTES IN MEDIA- A NARRATIVE REVIEW

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10.1136/jim-2015-000035.341

Purpose of Study Electronic cigarettes are a popular source of nicotine for many patients. There is no current regulation of these devices, and this exposes everyone to their sale and marketing. This review will present a narrative description of available surveys and articles involving electronic cigarettes in the media.

Methods Used A PubMed search was performed for articles published from Jan 01 2007 to Jan 31 2015 using the follow search terms within titles/abstracts: "Electronic cigarette*", "e-cig*", "electronic nicotine delivery", "Electric cigarette*". A total of 721 articles were found and the titles were reviewed to identify potentially relevant articles. 17 articles were summarized.

Summary of Results Three articles focused on advertising target audience. Caucasians were more aware of advertising efforts than blacks while both cohorts were increasingly exposed over time. Interest in e-cigarettes increases after exposure to visual images of their use. Nine articles focused on electronic media. E-cigarette commercial accounts use twitter heavily to advertise. The tweets commonly refer to cessation, offer discounts and direct links to commercial websites. Youtube videos available depict e-cigarettes as a healthier option compared with traditional cigarettes or as a more socially acceptable use. Most videos are posted as promotion of the product with this information often referencing health and cessation. Manufacturers' websites implicitly claim e-cigarettes have health benefits, no second hand smoke and as a viable option for cessation. E-cigarette companies also advertise their products to a broad television audience utilizing primarily national cable networks. Five articles focused on print and in-store product placement. Recently the availability of e-cigarette in retail stores more than doubled with a focus on higher income neighborhoods and locations with smoke-free air regulations.

Conclusions The media presence of electronic cigarettes reflects an effort to recruit more electronic cigarette users. Their use for cessation and a "healthier choice" are the main theme presented to an increasingly Caucasian upper middle class population. While the debate on health effects and use in smoking cessation continues, target audiences are exposed to a large effort to "improve" public perception of electronic cigarettes.

343 TRANSIENT ATRIAL FIBRILLATION AND RISK OF STROKE AFTER ACUTE SEPTIC SHOCK

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10.1136/jim-2015-000035.342

Introduction Transient atrial fibrillation (TAF) is typically observed in the hospital setting and tends to resolve by the time of discharge. We raise a question about the need for anticoagulation in patients with TAF in a setting of septic shock.

Case A 52 year old male with history of hypertension presented to the hospital with confusion and fever (101 F).On presentation he was tachycardic (115) and unable to follow commands.CT-head on admission exhibited no acute findings with clearn lungs on chest xray. EKG showed sinus tachycardia. Initial laboratory results showed acute renal failure (Cr/BUN 2.33/43), hypokalemia (1.8 mmol/L), anion gap acidosis (pH of 7.11), lactic acidocis (4.1 mmol/L), leukocytosis (20.7 K/uL). Urine analysis showed large leukocyte esterase, white blood cells (50) and many bacteria. He was intubated and treated with empiric antibiotics. Urine and Blood culture speciated Klebsiella Pneumonia. During his hospital stay, he was noted having a 2 hour episode of Atrial fibrillation with rapid ventricular rate (134) which was confirmed on EKG. He was started on Cardizem drip and converted to sinus rhythm. No prior history of atrial fibrillation or other cardiac arrhythmias were ever reported. Following extubation he showed signs of focal neurologic weakness. MRI of head exhibited bilaterally embolic infacts. Transesophageal echocardiogram with bubble study showed no thrumbus. Post-hospitalization holter monitoring did not record any other episodes of atrial fibrillation.

Discussion The occurrence of TAF during/following an acute phase of MI is linked with an increased risk for subsequent ischemic stroke/TIA. For this reason anticoagulation is recommended prior to discharge. However, no guidelines exist regarding anticoagulation in septic shock patients with TAF. Our patient who had no prior documented history of AF or heart disease was admitted in septic shock. His hospital course was complicated by new onset of TAF which was successfully converted to sinus rhythm. However,subsequent finding of extensive bilateral infarcts consistent with embolic phenomenal on MRI has raised the question of whether or not septic shock patients with TAF are at greater risk for developing TIA/stroke.Further studies are needed to establish the need for long term anticoagulation.

344 USE OF BIOLOGICS IN RHEUMATOLOGIC CONDITIONS: IS THERE A HIGHER RATE OF INFECTION?

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10.1136/jim-2015-000035.343

Purpose of Study Biologics are being increasingly used to treat auto-immune and rheumatologic conditions. Several cohort studies and case reports have observed an increased incidence of pulmonary infections in patients using infliximab in rheumatoid arthritis. However, the overall incidence of common bacterial infections in patients with autoimmune conditions who are on biologics is not defined. In this study we sought to determine whether patients on biologics for rheumatologic conditions have increased propensity to infections and to define the risk factors.

Methods Used We conducted a retrospective, cohort study of 97 patients who were on biologics followed up at the Atlanta Veterans Affairs Hospital. An IRB approval was obtained. Eligibility criteria included patients with rheumatologic conditions who were initiated on adalimumab, etanercept or infliximab. We collected baseline demographic data, duration of treatment, concurrent or previous use of corticosteroids, and incidence of infection. All statistical analyses were performed using Microsoft excel.

Summary of Results 42 patients (Table 1) were identified who were initiated on biologics for rheumatologic conditions most commonly rheumatoid arthritis, psoriasis and hidradenitis supprativa. 35 patients were on infliximab, 3 on adalimumab and 4 on etanercept with 45% using the agent for over 24 months. Of these, 10% were noted to have serious infections requiring hospitalizations, 33% with uncomplicated infections treated as an outpatient and 2% with recurrent infections. Respiratory infections were more commonly observed followed by skin and soft tissue infections. 86% of patients in this group had a history of steroid use with 48% concurrent steroid use.

Conclusions These data suggest that respiratory and soft tissue infections are more frequent than previously reported in patients who are on biologic agents for rheumatologic conditions. The risk is further exacerbated with concurrent use of corticosteroids. Larger epidemiologic based studies are needed to define the infectious complications in this patient population.

Abstract 344 Table 1

Age – years (median)	**52**
Sex – (% male)	**81**
Race (%)	
Non-Hispanic Whites	26
Non-Hispanic Blacks	72
Other	2
Smoking History (%)	
Current smoker	36
Former smoker	45
Average pack years	28
Rheumatologic Conditions (n)	
Rheumatoid Arthritis	14
Psoriasis	10
Hidradenitis Supprativa	7
Sarcoidosis	5
Polymyositis	2
Ankylosing Spondylitis	1
Other	3

345 HIV-1 TRANSGENE EXPRESSION IMPAIRS THE RESPONSE OF ALVEOLAR MACROPHAGES TO EXOGENOUS OXIDATIVE STRESS

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10.1136/jim-2015-000035.344

Purpose of Study The transcription factor nuclear factor (erythroid-derived 2)-like 2 (Nrf2) is the key mediator of the cellular response to oxidative stress in alveolar macrophages through its binding to the anti-oxidant response element (ARE), which promotes the expression of antioxidant genes. Previously we determined that HIV-1 transgene expression impairs Nrf2-ARE signaling and causes severe oxidative stress within the alveolar space, but the functional effects of that impairment are unknown. We therefore sought to develop an assay to assess the response of alveolar macrophages to oxidative stress *ex vivo* and apply this to our studies of how HIV-1 transgene expression alters Nrf2-ARE signaling and anti-oxidant defenses.

Methods Used We first developed an assay in which macrophages are challenged with a graded amount of hydrogen peroxide (H_2O_2) generated by glucose oxidase (GOX) and determined that treating the rat macrophage cell line (NR8383 cells) with 5 mU of GOX activated Nrf2-ARE signaling within 4 hours as reflected by increased gene expression of the ARE-dependent genes for Glutamate-cysteine ligase catalytic subunit (GCLC) and NAD(P)H dehydrogenase [quinone] 1 (NQO1). We next assessed the ability of primary alveolar macrophages from HIV-1 transgenic rats and wild type littermates exposed to GOX under these same conditions to clear H_2O_2 as assessed by the Amplex red assay.

Summary of Results Alveolar macrophages isolated from HIV-1 transgenic rats had a significant impairment in their ability to clear exogenous H_2O_2 by~18% compared to alveolar macrophages isolated from their wild type littermates.

Conclusions We can model the exogenous oxidative stress to which alveolar macrophages are exposed *in vivo* using a GOX system and determined that the ability of alveolar macrophages from HIV-1 transgenic rats to clear extracellular H_2O_2 is impaired. Whether or not this reflects an inability of these cells to activate the Nrf2-ARE signaling pathway in response to H_2O_2 is unknown and is under current investigation in our lab.

346 MULTIFACETED APPROACH TO CALCIUM CHANNEL BLOCKER OVERDOSE

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10.1136/jim-2015-000035.345

Case Report 14yo with a history of depression, transferred from outside emergency department six hours after ingestion of Norvasc (100 mg) in apparent suicide attempt. Required resuscitation there with fluids and Dopamine. Transferred due to persistent hypotension. Upon arrival she was alert, responsive, and stated her ingestion was an attempt to kill herself due to bullying. After arrival, she decompensated rapidly with altered mental status and severe refractory hypotension. In PICU, she was intubated requiring multiple pressors including (Norepinephrine, Epinephrine, Vasopressin, and Calcium Chloride drips) for the first 48 hours. She continued to have refractory hypotension and received MB, insulin and lipid infusions. These additional therapies improved her perfusion. On Day 3, she developed fluid overload and acute lung injury requiring continued respiratory support. After diuresis she was extubated on day 10 without deficits. Subsequently, she was admitted to a psychiatric facility.

Discussion Multimodal approach to shock in CCB overdose is needed including inotropic and vasoconstrictive therapies. Continued observation of the patient for several hours is necessary due to many extended release formulations that are often ingested. Newer research and protocols are recommending high-dose insulin euglycemia infusion, lipid infusions, and MB for refractory hypotension and poor perfusion. CCB also affects the pancreas and causes decrease insulin secretion and hyperglycemia which reduces the cardiac muscles utilization of glucose. High-Insulin (up to 1 unit/kg/hour) Euglycemia infusion allows the cardiac muscle to utilize glucose for contractility. Insulin is also an inotrope and causes vasodilation of the coronary arteries. MB besides treating methemaglobiunemia can be used in adults included anaphylaxis, hepatopulmonary syndrome, malaria, and vasoplegia syndrome. NAPDH can be used in refectory hypotension and vasoplegia syndrome due to its blockade of inducible nitric oxide. During shock or other syndromes like anaphylaxis with a large load of nitric oxide causing relaxation of vascular smooth muscle. Lipid infusion was used on this patient and has well documented literature in multiple drug toxicities, specific in anesthetic agents. Lipophilic drugs are successfully able to be treated with IV fat emulsion therapy.

Renal, Electrolyte and Hypertension Joint Plenary Poster Session and Reception 4:00 PM Thursday, February 18, 2016

347 MORTALITY DUE TO INVASIVE FUNGAL INFECTIONS IN KIDNEY TRANSPLANT PATIENTS IN THE UNITED STATES RENAL DATA SYSTEM

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10.1136/jim-2015-000035.346

Purpose of Study Kidney transplant patients have an increased risk of invasive fungal infection (IFI) due to their requirement for immunosuppression to prevent graft rejection. The primary objective of this project is to describe the incidence, type, and outcome of IFIs in this cohort.

Methods Used The United States Renal Data System (USRDS) 2005–2008 incident transplant patients were queried for IFI based on ICD-9 codes for invasive candidiasis, histoplasmosis, coccidiodomycosis, blastomycosis, as well as "Other" mycoses (invasive aspergillosis,

cryptococcosis, and mucormycosis). Additional clinical risk factors based on ICD-9 codes were also determined. Demographics were taken from form CMS-2728. The primary outcome was time to death from date of transplant. Cox Proportional Hazards (CPH) model was constructed to determine the adjusted hazard ratio (aHR) of each IFI controlling for other risk factors.

Summary of Results Of 57188 incident transplant patients, 1210(2.12%) were diagnosed with IFI. "Other" mycoses was the most common fungal infection group (n=890, 1.6%). Invasive aspergillosis (30.89%), cryptococcosis (29.89%), and mucormycosis (5.06%) were the majority of the infections in the "other" mycoses group. Invasive candidiasis had the highest mortality rate (65.9%, $p<0.0001$). The final CPH model indicated that invasive candidiasis (aHR=2.55, 95%CI 2.09–3.10) and "Other" mycoses (aHR=2.55, 95%CI 2.31–2.82) are significantly associated with an increased risk of mortality following transplant when controlling for other risk factors.

Conclusions These data indicate that invasive candidiasis, aspergillosis, cryptococcosis, and mucormycosis represent the most dangerous IFI following kidney transplantation. Further studies are indicated to assess their clinical risk factor profile for mortality.

348 PATHOGENIC ROLE OF INNATE IMMUNITY IN ARISTOLOCHIC ACID-INDUCED NEPHROTOXICITY

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10.1136/jim-2015-000035.347

Purpose of Study Studies demonstrated that aristolochic acid (AA) is toxic and carcinogenic to renal tubular epithelium. Although the exact extent of AA nephropathy (AAN) is unknown, case series have been reported in throughout the world and it has been implicated in the etiology of Balkan endemic nephritis (BEN) suggesting that AAN may be a global health problem. The precise mechanisms of AA nephrotoxicity are not known. We investigated the role of innate immunity mediated by Toll-like receptors (TLRs) in the pathophysiology of AAN using human renal proximal tubule epithelial cells (RPTECs).

Methods Used Confluent RPTECs were exposed to AA (30 μM–480 μM) for 24–48 hr and cytotoxicity was evaluated using lactate dehydrogenase (LDH) assay. RNA and protein were isolated from AA-exposed and unexposed RPTECs. Real time RT-PCR was performed for various gene primers to evaluate the role of innate immunity in AAN development.

Summary of Results At 240 μM after 48 hr exposure, AA induced significant toxicity in RPTECs as measured by LDH release in the culture medium and significant cell injury was observed morphologically. AA significantly increased mRNA expression of acute kidney injury (AKI) biomarker neutrophil gelatinase-associated lipocalin (NGAL), but at the same time significantly decreased the expression of another AKI biomarker kidney injury molecule 1 (KIM-1). AA also significantly upregulated the expression of prominent AKI-related TLRs (TLR2, TLR4 and TLR6) and their adaptor molecules (MyD88 and TICAM-1) followed by the activation of pro-inflammatory cytokines (IL-6 and TNF-α) and the tumor suppressor protein and a biomarker for apoptosis, P53, in the downstream signaling pathways of TLRs. AA also significantly upregulated expression of multi drug resistant family gene MDR1 in RPTECs.

Conclusions AA is toxic to RPTECs and restricts cell growth. NGAL but not KIM-1 could be a diagnostic biomarker for AAN. Activation of TLR2, TLR4, and TLR6 are involved in the pathophysiology of AA nephrotoxicity.

349 CONTINUOUS HEMODIALYSIS WITH PLASMAPHERESIS AND SODIUM THYOSULPHATE, A SUCCESSFUL TREATMENT IN CALCIPHYLAXIS

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10.1136/jim-2015-000035.348

Calciphylaxis or calcific uremic arteriopathy is a rare cutaneous-systemic disease occurring in patients with advanced chronic kidney disease. Our ESRD patient, admitted for severe extremities pain due to calciphylaxis, her symptoms improved with plasmapheresis, sodium thiosulphate and daily HD.**Introduction** Calciphylaxis, or calcific uremic arteriolopathy, is a rare but serious disease, believed to affect 1–4% of all dialysis patients, characterized by vascular calcification, thrombosis and skin necrosis. It results in chronic non-healing wounds and is usually fatal.

Case Report 51 year- old African American woman with ESRD on HD for two years admitted with calciphylaxis. Three weeks before the hospital admission, patient noticed multiple small necrotic circular lesions around the lower extremities, extremely painful to touch. Patient was seen by her primary care and started on antibiotic for possible cellulitis for one week, however, without improvement. She underwent skin biopsy and admitted to our hospital for further assessment and pain management. Skin biopsy consistent with calciphylaxis. We approached with a new protocol for calciphylaxis treatment which consisted of daily 4 hours hd, 25 g of sodium thiosulphate during last hour of hemodialysis followed by plasmapheresis treatment. Patient pain improved as well as wound healing with no new skin lesions.

Discussion Calciphylaxis is a rare and serious disorder characterized by systemic calcification of the arterioles that leads to ischemia and subcutaneous necrosis. Lower extremities are the most common area involved, with legs being the most common site. Subsequently eschar develops followed by frank ulceration, gangrene, and sepsis. Diagnosis is done by biopsy. The intima of the vessels is commonly fibrosed and there may be intravascular thrombi. The exact mechanism of Sodium thiosulfate in calciphylaxis is unknown.Plasmapheresis has been consider as a viable treatment to help in the management of calciphylaxis. Aggressive hemodialysis with plasmapheresis as well as 25 g of STS, may reduce symptoms and may help wound healing. However further studies are needed to evaluate role of plasmapheresis in calciphylaxis treatment.

350 AN UNUSUAL CASE OF ACUTE RENAL FAILURE AS THE INITIAL PRESENTATION OF LUPUS

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Case Report A 23-year-old woman with a history of hypertension, iron deficiency anemia, and recent premature delivery due to eclampsia presented with face, arm, and leg swelling and dark foamy urine for four days. The patient reported a facial rash five years prior and had two maternal aunts with lupus. She had stopped taking her antihypertensives at the onset of symptoms and her blood pressure was 217/159, which was controlled with magnesium. She became hypermagnesemic to 7.5 mg/dL; magnesium was stopped and hydralazine and labetalol were started. Her initial urinalysis and labs suggested acute renal failure in the setting of nephritic syndrome with a creatinine of 4.4 mg/dL. She had hyponatremia (serum sodium 123 mEQ/L) and was restricted to 1-liter free water. Limiting intake led to further kidney injury and she was given more fluids. The patient's hemoglobin dropped from 9.2 g/dL to 7.5 g/dL with an LDH of 313 units/L and haptoglobin of <10 mg/dL; the patient was transfused two units of blood. She also had hyperuricemia at 9.2 mg/dL treated with allopurinol. Sodium citrate was used for acidosis. Worsening hyperphosphatemia (serum phosphorous 8.9 mg/dL) was refractory to increasing doses of sevelamer. Renal biopsy showed moderate to severe lupus nephritis; class IV, with accelerated hypertensive and glomerular and vascular involvement. She had low C4 complement levels, normal C3, and a positive ANA. She was started on pulse steroids, mycophenylate and birth control. Kidney injury improved and the patient was discharged however, a week later she presented with worsening kidney failure requiring further therapy.

Discussion Approximately half of patients diagnosed with Systemic Lupus Erythematous (SLE) will manifest with lupus nephritis (LN) in their lifetime. LN is suggested by an abnormal urinalysis showing proteinuria or evidence of renal insufficiency. This case is notable for the severity of LN with both glomerular and vascular involvement of the kidneys and the degree of renal failure as her initial manifestation of SLE. A high suspicion for lupus in patients with rapidly progressing kidney failure with a family history of SLE despite a paucity of classic symptoms may provide early diagnosis and treatment.

351 FENTANYL PATCH INGESTION LEADING TO LIFELONG HD

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10.1136/jim-2015-000035.350

Case Report 47-yo obese CM with a PMH of HTN and polysubstance abuse presented from home with a CC of weakness and AMS. He was found to be in AKI, with a Cr of 3.38 mg/dl, rhabdomyolysis, with a CK of 94,050 U/L, and hyperkalemic(7.2 mmol/L), with peaked T-waves on ECG. Vitals were stable. He was alert but oriented to only name and place. GCS 13. He was noted to have crackles in R lung base and multiple ecchymosis on posterior chest wall and the lateral aspect of mid R humerus. CV, abdominal, and neuro exam were unremarkable. Drugs of abuse screen was positive for THC, opiates, and benzos. Urine output was 240 ml overnight. CXR revealed lateral L rib fracture. Family was later contacted and stated that he ingested a Fentanyl 25 mcg patch a day prior and found him unarousable on the floor. The pt was treated with aggressive fluid resuscitation, normal saline and sodium bicarbonate. Hyperkalemia was treated with insulin and Ca gluconate. Despite aggressive fluid resuscitation, patient's Cr worsened, he became anuric, and appeared to be developing orthopnea. Aggressive fluids were discontinued and pt was started on emergent HD. Throughout the hospital course the pt's CK trended down, he regained consciousness but Cr continued to trend upward. He was then started on HD for Renal failure. AKI has been reported with rhabdomyolysis with CK values of 15 k to 20 k, however it can be seen with values as low as 5 k. Rifle criteria placed this patient in Renal failure. Only time to tell if the patient will need lifelong dialysis. It has been reported that fentanyl may cause renal failure as a reported side effect. Therefore, it is recommended that dose adjustments be made for individuals with renal dysfunction. This in conjunction with the sedative properties of the medication can cause drowsiness, immobility, and even respiratory depression leading to respiratory failure and death. We present a pt with severe rhabdomyolysis secondary to transdermal fentanyl ingestion with temporary immobility that ultimately led to renal failure requiring HD.

352 ECULIZUMAB ADMINITSRATION FOR THE TREATMENT OF DRUG-INDUCED THROMBOTIC MICROANGOPATHY

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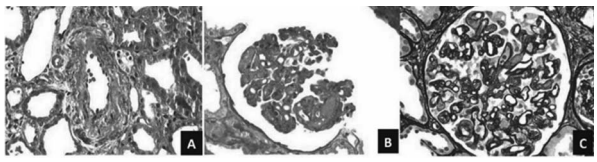
Introuction Gemcitabine-induced thrombotic microangiopathy (TMA) is rare. Nonetheless, it manifests with multiorgan dysfunction and is associated with high mortality (up to 90%) despite gemcitabine discontinuation and supportive measures, including therapeutic plasma exchange (TPE).

Case A 65 year-old white female with a history of smoking and anal cancer presented with worsening anemia (Hb 6.2 g/dL), thrombocytopenia (platelets 51×10^9/L), and elevated serum creatinine (SCr- 3.2 mg/dL). She was undergoing chemotherapy with gemcitabine from 9/2014 until 4/2015 when it was discontinued due to pancytopenia. The constellation of progressive hemolytic anemia (HA) and elevated LDH (485 U/L), schistocytes on peripheral smear, thrombocytopenia, and unexplained acute kidney injury led to a suspicion of gemcitabine-induced TMA. Kidney biopsy demonstrated changes consistent with chronic TMA and severe tubulointerstitial fibrosis (Figure 1). ADAMTS 13 activity and complement levels were normal. A bone marrow biopsy was unremarkable. No hematological and



Abstract 352 Figure 1 A. Renal artery with intimal fibrosis. B. Glomerulus with fibrin thrombi. C. Duplication of GBM.

renal response was observed with the initiation of steroids and TPE. However, HA and thrombocytopenia markedly improved with Hb up to 9.8 g/dL and platelets 187×10^9/L, respectively, after the 2nd dose of eculizumab. Unfortunately, the kidney injury persisted and the patient required hemodialysis. Subsequently, the patient was continued on maintenance dose of eculizumab with sustained hematological response but she remained dialysis dependent at 2-month follow up.

Discussion Eculizumab is a humanized monoclonal antibody that inhibits terminal complement and is used in treating atypical HUS. Presently, eculizumab was also effective in treating gemcitabine-induced TMA with resolution of hematologic manifestations and improving the patient's survival. However, the renal involvement in drug-induced TMA progresses rapidly and less reversible; therefore, close surveillance for TMA is required for patients treated with gemcitabine.

353 TUBEROUS SCLEROSIS AND BILATERAL RENAL ANGIOMYOLIPOMAS: A CASE REPORT AND LITERATURE REVIEW OF EMERGING TREATMENT STRATEGIES

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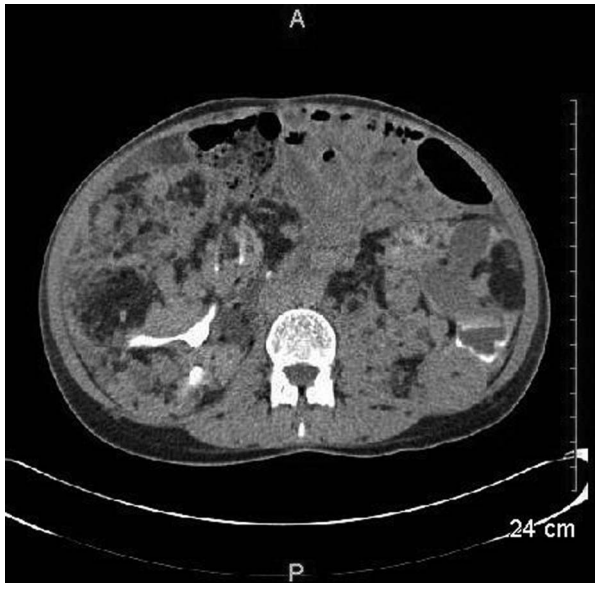

Abstract 353 Figure 1 Transverse view of CT urogram with contrast demonstrating extensive bilateral angiomyolipomas with evidence of left hydronephrosis.

Case Report Tuberous sclerosis complex is a rare multisystemic genetic disorder associated with the development of benign hamartomas. Angiomyolipomas are one such characteristic finding that may be seen in 55–80% of tuberous sclerosis complex patients. While normally asymptomatic they can also cause significant morbidity and mortality. We present the case of a patient with tuberous sclerosis complex and recently discovered bilateral renal angiomyolipomas, admitted for hematuria who underwent left renal artery embolization, however, worsening renal function necessitated subsequent nephrectomy. Through this case we emphasize the need for vigilance when faced with someone having a diagnosis of tuberous sclerosis complex and presenting with hematuria. We will also highlight the current treatment options available for renal angiomyolipomas, and discuss the emerging strategies that are targeting the PI3K/AKT/mTOR pathway of which the genes involved in tuberous sclerosis complex play a central role. These novel therapies will hopefully reduce the need for invasive interventions.

354 RHABDOMYOLYSIS-ASSOCIATED ACUTE KIDNEY INJURY WITH NORMAL CREATINE PHOSPHOKINASE: A CASE REPORT

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Case Report Rhabdomyolysis is a syndrome characterized by the breakdown of skeletal muscle and leakage of intracellular myocyte contents, such as creatine phosphokinase (CPK) and myoglobin into the interstitial space and plasma. Myoglobin can be directly toxic to tubular cells due to generation of oxygen free radicals, cast precipitation, and tubular obstruction, leading to acute kidney injury (AKI). Elevated CPK of at least 5 times the upper limit of normal is an important diagnostic marker of Rhabdomyolysis. In this report, we present a case of rhabdomyolysis in which the CPK was normal at presentation. A 32-year-old male was brought to the emergency room after he was found unconscious by his friends. Reportedly he took large amount of "unknown drugs". He was intubated for acute respiratory failure and was also noted to have anuric AKI. Urinalysis at presentation showed trace amount of blood, rare RBCs and urine drug screen was positive for cocaine, opioids and cannabinoids. CPK was 156 at presentation and was 66 one week after. Work-up for glomerulonephritis and vasculitis was negative. He was initiated on renal replacement therapy (RRT) and a kidney biopsy was done to ascertain the cause for AKI. Biopsy showed severe acute tubular injury with positive myoglobin casts; no other obvious glomerular or tubular pathology was noted. Supportive management and RRT was provided and the patient spontaneously recovered his renal function after a few weeks. At the time of discharge, he did not have any residual renal impairment. This is an uncommon clinical presentation of severe rhabdomyolysis complicated by AKI; CPK levels did not correlate with the kidney biopsy findings. This suggests that CPK alone may not be a sensitive marker

for rhabdomyolysis-induced AKI in some cases. This case also demonstrates the need for a change in management; administering IV fluids in anuric patients is limited due to concerns for volume overload and pulmonary edema. The use of highly permeable membranes in high cutoff continuous veno-venous hemofiltration (CVVH) could be a promising treatment, because it helps remove myoglobin; this is usually guided by extremely high CPK levels; this modality is useful in preventing severe AKI when instituted early.

355 LOW-INTENSITY RITUXIMAB THERAPY FOR NEPHROTIC SYNDROME AND ADVANCED CKD IN SYSTEMIC LUPUS ERYTHEMATOSUS: ONE DOSE MAY NOT FIT ALL

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Case Report Aggressive treatment of Systemic Lupus Erythematosus (SLE) in face of advanced Chronic Kidney Disease (CKD) and nephrotic syndrome (NS) may represent a difficult therapeutic dilemma. The danger of immunosuppressive therapy ought to be counterbalanced by the risk of ongoing nephrotic-range proteinuria. A 45 year-old petite African-American female (body weight 52 kg) with past history of SLE and CKD presented for further follow-up after a long period of non-adherence. Prior treatment included hydroxychloroquine (HCQ), methotrexate and prednisone but she has not been on therapy for 10 years. She was admitted to the inpatient service due to suspected SLE flare-up with renal failure (serum creatinine between 4.4–7.4 mg/dL) and NS (serum albumin of 3.4 g/dL). Random urine protein/creatinine (UPC) predicted proteinuria>4 gm. Renal biopsy revealed membranous (Class V) SLE with advanced fibrosis ("80%") but only ~50% of glomeruli reported as completely scarred. All this represented a difficult management dilemma. After appropriate informed consenting, we proceeded with 2 dose of IV rituximab (initial dose 500 mg; repeated dose 750 mg 6 weeks later). One month later, proteinuria persisted but CD19 count was suppressed to 0% (normal: 2–11) and absolute CD4 count was moderately suppressed at 199 mm^3 (506–3142); hence, further rituximab was deferred. On subsequent follow-up 1.5 years later, serum creatinine decreased to ~4 mg/dL (estimated race-adjusted GFR 16–18 mL/min/1.73 m^2), and random UPC near-normalized to 0.2 with normal serum albumin (4–4.6 g/dL). She remained free of clinical uremia or any clinical activity of SLE. Current immunomodulating therapy includes only prednisone 10 mg every other day and HCQ 200 mg daily. In summary, low-intensity rituximab therapy achieved complete remission of nephrotic syndrome, enabling her to be an excellent candidate for peritoneal dialysis and future renal transplantation both.

356 STREPTOZOTOCIN-INDUCED TYPE 2 DIABETES IN ENDOTHELIAL NITRIC OXIDE SYNTHASE-DEFICIENT MICE

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Purpose of Study Endothelial nitric oxide synthase deficient ($eNOS^{-/-}$) mice are hypertensive and are prone to kidney disease. We used aged $eNOS^{-/-}$ mice to develop a type 2 diabetes model with elevated hypertension to create a model for diabetic nephropathy.

Methods Used Male $eNOS^{-/-}$ mice were fed on high fat diet (HFD, 50% fat Kcal) for 9 - 12 week and diabetes was induced using low doses of streptozotocin (STZ, 50 mg/kg b.w.) for 3 days. Control $eNOS^{-/-}$ mice were fed on regular diet. 24 hr urine was collected in metabolic cages and mice were sacrificed at 16 - 20 week. Urine and blood analysis were performed.

Summary of Results 72 hr after 3rd STZ injection, $eNOS^{-/-}$ mice on HFD developed diabetes as shown by non-fasting blood glucose levels>300 mg/dl that continued to increase with age. Aged diabetic (DB) $eNOS^{-/-}$ mice developed polyuria ($p=0.003$), glucosuria ($p<0.0001$), albuminuria ($p=0.016$), proteinuria ($p=0.043$) and significantly lower urine specific gravity ($p=0.0005$) compared to non-diabetic (ND) $eNOS^{-/-}$ mice. DB $eNOS^{-/-}$ mice showed significantly higher systolic blood pressure, pulse rate and blood hemoglobin A1C. Aged DB $eNOS^{-/-}$ mice showed metabolic acidosis characterized by significantly lower blood HCO_3 (ND=25.0±1.7 SE vs DB=17.31±0.9 SE mEq/L, $p=0.0007$) and lower 24 hr urinary pH values (ND=6.8±0.17 SE vs DB=6.3±0.11 SE, $p=0.043$). Aged DB $eNOS^{-/-}$ mice also developed mild nephropathy as shown by significant increase in serum creatinine (ND=0.11±0.1 SE vs DB=0.252±0.05 SE mg/dl, $p=0.044$) and was further confirmed by significant increase in urinary kidney injury biomarkers (NGAL, $p=0.0001$ and KIM-1, $p=0.011$) as determined by ELISA.

Conclusions Aged $eNOS^{-/-}$ mice on HFD and STZ readily develop diabetes, metabolic acidosis and diabetic nephropathy with proteinuria. These mice could be used as type 2 diabetes model with hypertension for further studies of diabetic nephropathy.

357 HISTONE DEACETYLASES 1 AND 2 BALANCE NEPHRON PROGENITOR RENEWAL AND DIFFERENTIATION DURING KIDNEY ORGANOGENESIS

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Purpose of Study Kidney development is a complex process that requires precise integration of various progenitor cell populations of diverse embryonic origins.

Congenital Anomalies of the Kidney and Urinary Tract (CAKUT) are a major cause of morbidity in children, constituting approximately 20~30% of all anomalies identified in the prenatal period. CAKUT plays a causative role in 30~50% of cases of end stage renal disease (ESRD) in children, and predisposes to the development of hypertension and other renal-cardiovascular diseases in patients that survive to adolescence and adulthood. The long-term goal of our study is to uncover the epigenetic mechanisms accounting for CAKUT. Here, we investigate the nephric lineage-specific functions of class I histone deacetylases (HDACs), HDAC1 and HDAC2, in kidney development. HDACs are a conserved group of enzymes that remove acetyl groups from histones as well as non-histone proteins.
Methods Used A genetic model of conditional HDAC1/2 deletion in renal progenitor cells was used for the investigation of HDAC1 and 2 function in renal progenitor cells during kidney organogenesis. Mice bearing conditional null alleles of HDAC1 and HDAC2 were crossed to Six2-CreEGFP transgenic mice to delete HDAC1 and 2 genes, specifically in nephron progenitor cells (NPC, also known as cap mesenchyme cells).
Summary of Results Our data revealed that mice with three or less deleted alleles for HDAC 1 and 2 live until adulthood with normal growth and development, whereas concurrent deletion of both HDAC1 and 2 resulted in early postnatal lethality. At birth, $NPC^{HDAC1,\ 2-/-}$ mice exhibit bilateral renal hypoplasia, including small kidney size, decreased number of nephrons and formation of multiple cysts. Double deletion of HDAC 1 and HDAC2 in the NPC depletes the cap mesenchyme and blocks nephron formation at the renal vesicle stage, due to defective cell proliferation and repression of the HNF-Notch/Lhx1 pathways. We also found that $NPC^{HDAC1,2-/-}$ kidneys ectopic expression of Wnt4 which indicates that HDAC1/2 prevents premature differentiation of CM cells through inhibition of Wnt/ β-catenin target genes, including *Wnt4*.
Conclusions This study shows that Histone Deacetylases 1 and 2 are required for gene expression and the balance of self-renewal and differentiation of renal progenitor cells

358 FERTILIZER: AN UNCOMMON CAUSE OF HYPERPHOSPHATEMIA

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Case Report Hyperphosphatemia is an electrolyte abnormality in which there is an elevated level of phosphorous in the blood. Normal phosphorous levels should be 2.7–4.5 mg/dL. In CKD patients, the most likely cause of hyperphosphatemia would be renal insufficiency. The case below does not seem to fall into any of the traditional causes. It is possible that the high phosphorous could have been caused by "13–13–13" industrialized fertilizer, which is quite high in phosphorous.
Case A 57-year-old male with past medical history of CKD stage III, DM-II, RA, OA, and HTN presented to his Nephrologist's outpatient office with c/o malaise and muscle twitching. In the ER, he had a creatinine of 5.3 mg/dL (up from a baseline of 1.4 mg/dL taken 6 days ago), and a phosphorous of >15 mg/dL (up from his baseline of within normal range). This would most likely rule out hyperphosphatemia caused by chronic renal failure. His potassium remained normal inhouse, and his uric acid was only mildly elevated, so tumor lysis syndrome could most likely be ruled out. The patient states that he was gardening, two days prior to presenting to the ER, for twelve hours with fertilizer that his wife says was "13–13–13," which is extremely high in phosphorous. Initially, he was treated conservatively with IV fluids and supportive measures, but later that night he developed altered mental status, so the decision was made to dialyze him. After two sessions of dialysis, his creatinine decreased to 1.0 mg/dL, and his phosphorous decreased to 1.9 mg/dL. The patient felt significantly better and was then discharged.
Discussion This case does not seem to fall into the traditional causes of hyperphosphatemia. His baseline creatinine was 1.4 mg/dL hence CRF most probably would not be a cause of his hyperphosphatemia. Tumor lysis syndrome and other more traditional causes of hyperphosphatemia seemed less likely. Our hypothesis is that since the renal failure was acute and occurred immediately following his gardening with the 13–13–13 fertilizer, and since other causes of the high phosphorous were excluded, the exposure by inhalation to the fertilizer can very likely be the cause of this patient's hyperphosphatemia

359 PRORENIN RECEPTOR SIGNALING PROMOTES NEPHRON INDUCTION DURING MOUSE KIDNEY DEVELOPMENT

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Purpose of Study The prorenin receptor (PRR) acts in ligand-independent manner to regulate the functions of vacuolar proton pump H^+-ATPase and of Wnt receptor signaling complex. Global *PRR* knockout is lethal in mice, indicating an essential role of the PRR in embryonic development. Deficient nephrogenesis is the major factor contributing to congenital renal hypodysplasia (RHD), one of the leading causes of childhood end-stage kidney disease. To determine the potential role of the PRR in nephrogenesis, we generated mice with a conditional deletion of the *PRR* in *Six2*-positive nephron progenitors and their epithelial derivatives ($Six2^{PRR-/-}$).
Methods Used Q-RT-PCR is used to demonstrate the kidney development marker genes in the PRR Cap specific knock out mice kidneys on E15.5. Immunohistochemistry shows that Nephron markers protein levels expression was down regulated in PRR Cap specific knock out kidneys on E15.5. The urine protein level was measured in the adult (2-monthes) mice to compare the difference between the wild type and heterozygous mice.
Summary of Results Targeted inactivation of *PRR* in nephron progenitors caused a marked decrease in the

number of developing nephrons, severe congenital RHD with collapsed glomeruli and an enlarged Bowman's space (such as those seen with a collapsing focal segmental glomerulosclerosis), podocyte foot process effacement and early postnatal death within 48 hours from birth. UB branching was greatly reduced, likely secondary to decreased nephrogenesis. Reduced congenital nephron endowment resulted from premature depletion of nephron progenitor cell population due to impaired progenitor cell proliferation and loss of normal molecular inductive response to canonical Wnt/β-catenin signaling within the metanephric mesenchyme. At 2 months of age, heterozygous *Six2*$^{PRR+/-}$ mice exhibited focal glomerulosclerosis, decreased kidney function and massive proteinuria. Collectively, these results are consistent with a cell-autonomous requirement for the PRR within nephron progenitors for progenitor maintenance, induction of nephrogenesis, normal kidney development and function.
Conclusions *PRR* is a potential candidate for future genetic screening studies in patients with congenital RHD and proteinuric kidney disease.

360 SEVERE HYPONATREMIA SECONDARY TO UNTREATED HYPOTHYROIDISM

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Case Report Hyponatremia is an electrolyte disturbance commonly seen in hospitalized patients. Causes are multifactorial and a low Na level alone is not diagnostically helpful. A 51 year old man with known history of non-small cell lung cancer with brain metastases status-post total brain radiation, presented with three days of urinary and fecal incontinence, decreased oral intake, and altered mental status. Past medical history includes CAD, CHF, COPD, HTN and hypothyroidism. Upon exam, temperature 35.9°C, BP 92/73 mmHg. He was drowsy, unable to verbalize, but followed commands. Initial labs showed K= 1.6 mEq/L and Na=125 mEq/L. Thyroid panel, TSH >100.0 μU/mL and free T4 <0.25 ng/dL. He was restarted on Synthroid 175 mcg PO QD; and a stress dose of Synthroid 200 mcg IV for two days plus PO levothyroxine. TPO antibody titer was WNL at 0.3 IU/mL, suspicious for adrenal insufficiency. A cosytropin stimulation test showed cortisol levels of 3.5 mcg/dL at baseline, 30 minute rise to 17.5 mcg/dL and a drop to 11.4 mcg/dL 30 minutes later. He was started on Prednisone 5 mg daily. Hormones levels were ordered to rule out panhypopituitarism secondary to brain radiation; results were within normal limits. He was treated with levothyroxine 175 mcg PO QD and hydrocortisone 50 mg PO BID, for his hypothyroidism secondary to adrenal insufficiency. 8 days after treatment he was discharged home with resolution of symptoms and restoration electrolytes at physiological range. Association between electrolyte disturbance and hypothyroidism is a widely debated issue. Electrolyte disturbances, particularly hyponatremia are associated with increased morbidity and mortality in hospitalized patients. The underlying pathophysiology between hypothyroidism and kidney response is interconnected by a single hormone. The proposed mechanism for hyponatremia in the presence of severe hypothyroidism is due to defective diuresis related to vasopressin at the level of the kidney. Others argue that the role of hypothyroidism in producing a hyponatremia is purely a renal-mediated dysfunction. Despite the disagreement over the underlying pathophysiology, it is an accepted fact that treatment of hypothyroidism with replacement of deficient thyroid hormone results in restoration of normal fluid and electrolyte balances.

361 CASPASE 8 AND RIP3 ARE NOT REQUIRED FOR NUCLEAR REPROGRAMMING AND DIFFERENTIATION

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Purpose of Study Induced pluripotent stem cells (iPSCs) are derived from somatic cells and possess great potential for benefit in renal disease and transplantation. However, nuclear reprogramming of somatic cells into iPSCs is inefficient, limiting clinical application of these cells. These poorly understood processes involve complex signaling and epigenetic changes. We have found that innate immune pathways are required for efficient nuclear reprogramming, and can activate caspase 8 and receptor interacting protein 3 (RIP3) pathways, which regulate extrinsic death. Though important in host defense, triggering cell death pathways during reprogramming can be detrimental. We seek to understand how innate immune signaling impacts tissue regeneration using cells from mutant strains of mice deficient in death pathways.
Methods Used We investigated the roles of caspase 8 and RIP3 in nuclear reprogramming and subsequent differentiation using mouse embryonic fibroblasts derived from mice that genetically lack these factors. These fibroblasts were reprogrammed using a lentivirus system and analyzed for expression of pluripotency markers and ability to form teratomas. Finally, these cells were cultured *in vitro* into embryoid bodies to differentiate into cardiomyocyte precursor cells.
Summary of Results Fibroblasts lacking caspase 8 and RIP3 were capable of reprogramming into iPSCs that expressed pluripotency markers. These iPSCs could also develop into teratomas that contained all three embryonic germ layers. IPSCs lacking caspase 8 and RIP3 were also capable of differentiating into cardiomyocyte precursor cells.
Conclusions Signaling through innate immunity pathways enhances the process of nuclear reprogramming. However, we found that caspase 8 and RIP3, which regulate cell death and are activated downstream in these pathways, are not required for nuclear reprogramming to occur, nor are they necessary for subsequent differentiation. Understanding the importance of these pathways in stem cell biology contributes to the potential for further understanding and enhancement of the development and application of stem cell research to kidney and cardiovascular disease.