Eastern Regional Meeting

Friday, March 16, 2018

Wyndham Philadelphia Historic District, Philadelphia, USA

AFMR PRESIDENTIAL PLENARY SESSION (SCIENTIFIC SESSION I)

Cardiovascular Disease & Pulmonology

8:30 AM – 10:30 AM

1 A PHASE IV, RANDOMISED, DOUBLE-BLIND, PLACEBO-CONTROLLED CROSSOVER STUDY OF THE EFFECTS OF USTEKINUMAB ON VASCULAR INFLAMMATION IN PSORIASIS (THE VIP-U TRIAL)

[1]Joel M Gelfand, [1]Junko Takeshita, [2]Amit Dey, [1]Daniel Shin, [1]Megan Noe, [1]Zelma Chiesa Fuxench, [2]Aditya A Joshi, [1]Judith Alvarez, [1]Suzette Baez Vanderbeek, [2]Charlotte L Harrington, [1]Tom Werner, [2]Martin P Playford, [1]Drew Torigian, [2]Mark A Ahlman, [1]Abass Alavi, [2]Nehal N Mehta*. *[1]University of Pennsylvania, Philadelphia, Pennsylvania, USA; [2]Cardiology, NHLBI, NIH, Bethesda, Maryland, USA*

10.1136/jim-2018-000730.1

Purpose of study Inflammation is critical to atherosclerosis. Psoriasis, a chronic inflammatory disease, is associated with increased cardiovascular (CV) risk and mortality, partly due to increased inflammatory activity in the vasculature. The severity of skin disease in psoriasis is positively associated with CV risk including increased vascular inflammation (VI) measured by 18-FDG-PET/CT, which is an imaging biomarker predictive of CV events, associated with inflammatory biomarkers in the serum and modulates with preventive strategies (statins). Ustekinumab, an approved psoriasis therapy, targets IL12/23, cytokines upregulated in psoriasis and vascular disease. However, the effect of ustekinumab on VI is unknown. Therefore, we assessed the effect of 12 weeks treatment with ustekinumab compared to placebo on VI in patients with psoriasis in a randomised, double blind, placebo controlled trial (NCT02187172).

Methods used Patients had moderate to severe psoriasis (PASI $\geq$12 and BSA $\geq$10) and were washed out of psoriasis treatments. Patients were randomised (1:1) to ustekinumab vs. placebo for 12 weeks. Primary outcomes were FDG-PET/CT (60 min FDG uptake time) obtained at week 0 and 12 to assess VI as target-to-background ratio (TBR).

Summary of results Of 62 patients screened 43 patients were randomised (mean age 42, mean PASI 20) and 41 completed the 12 week randomised trial. A 75% reduction in PASI was achieved by 77% treated with ustekinumab and 11% in the placebo group at 12 week ($p<0.001$). Total average aortic VI was TBR of 1.310.15 at baseline which reduced by 6.6% at week 12 in the ustekinumab group while in the placebo group, TBR increased by 12.1% ($p=0.001$).

Conclusions This study shows a successful clinical response upon ustekinumab treatment for 12 weeks when compared to placebo in the skin as well as on VI in psoriasis, further suggesting that inhibition of IL12/23 in psoriasis may lower CV risk.

2 EVALUATION OF BIOLOGIC THERAPY VERSUS TRIPLE DMARD THERAPY IN RA PATIENTS UNRESPONSIVE TO METHOTREXATE

Nicholas A Vernice*, Allison B Reiss, Heather A Renna, Joshua DeLeon, Steven Carsons, Lora J Kasselman. *Biomedical Research, NYU Winthrop Hospital, Mineola, New York, USA*

10.1136/jim-2018-000730.2

Purpose of study Rheumatoid arthritis (RA) patients experience accelerated atherosclerosis with increased cardiovascular disease (CVD) risk. Our research has demonstrated that RA plasma induces pro-atherogenic derangements in cholesterol transport resulting in macrophage foam cell formation: a hallmark of atherosclerosis. Methotrexate (MTX) is the anchor drug commonly prescribed for RA. MTX reduces CVD morbidity and mortality in RA. Inadequate responders to MTX may receive additional drugs. The TARGET Trial is designed to compare the effects of MTX +sulfasalazine (SSZ) +hydroxychloroquine (HCQ) vs. MTX +anti-tumour necrosis factor antibody (TNFi) therapy on CVD risk in RA. This cell culture-based experiment compared relative efficacy of these 2 regimens as well as those of their individual components to determine the extent to and means by which each course of treatment is atheroprotective.

Methods used THP-1 differentiated macrophages were exposed to conditions a-f: [a] MTX (5 uM), [b] SSZ (5 ug/ml), [c] HCQ (1000 ng/ml) [d] MTX +SSZ + HCQ, [e] MTX +TNFi (adalimumab) and [f] RPMI media with addition of either the inflammatory cytokine IFN-γ (100 U/mL) or 5% RA plasma. Changes in mRNA and protein expression were assessed via RT-qPCR and immunoblotting, respectively. Foam cell formation was measured using Oil-Red-O and fluorescent-oxLDL imaging and analysis. Cell viability was assessed with trypan blue. Intracellular cholesterol and efflux capacity were quantified using the Amplex Red fluorometric method.

Summary of results Macrophages in the triple therapy (MTX +SSZ + HCQ)+IFN-γ condition exhibited increased expression of the cholesterol efflux transporter ABCA1 ($p=0.01$). Similar results were seen in the triple therapy condition +RA patient plasma with an increase in the efflux genes ABCG1 ($p=0.01$) and LXRα ($p<0.001$), along with decreased expression of the scavenger receptor LOX1 ($p<0.001$). TNFi failed to alter cholesterol transport genes.

Conclusions This study is a complement to the *in vivo* TARGET Trial and can give mechanistic insight into how specific drugs correct abnormalities in lipid handling associated with RA. Our data suggests that traditional triple therapy may be superior to TNFi +MTX with respect to atheroprotective effects on macrophage cholesterol handling.

*Abstracts denoted with an asterisk are 2018 Eastern Region Scholar Award Winners

3 A SMALL PEPTIDE BLOCKING INHIBITOR DIMINISHES INFLAMMATORY RESPONSES THOUGH PROMOTING LYSOPHOSPHATIDIC ACID RECEPTOR 1 DEGRADATION

[1,2]Shuang Li*, [2]Jianxin Wei, [2]Su Dong, [2]Jing Zhao, [1]Dong Shang, [2]Yutong Zhao. *[1]Department of General Surgery, the First Affiliated Hospital of Dalian Medical University, Dalian, China; [2]Department of Medicine, University of Pittsburgh, Pittsburgh, Pennsylvania, USA*

10.1136/jim-2018-000730.3

Purpose of study Lysophosphatidic acid (LPA) has been shown to exhibit pro-inflammatory property. LPA induces activation of NF-κB and MAPK and cytokine release in a variety of cell types including lung epithelial cells. The biological effects of LPA are through ligation to its G protein-coupled receptors, named LPA15. Among them, LPA1 is highly expressed in lung. Our recent study revealed that LPA1 stability is regulated by the deubiquitinating enzyme USP11, thus suggesting that inhibition of USP11 reduces inflammatory responses. However, the specific USP11 inhibitor has not been identified. Our goal is to develop a specific blocking inhibitor for disruption the interaction between USP11 and LPA1, thereby it could reduce LPA1 levels and ameliorate inflammatory diseases including lung injury.

Methods used Based on the USP11 binding domain on LPA1, we designed several peptides. To examine the effects of the blocking peptide on the interaction between LPA1 and USP11, we performed co-immunoprecipitation. To evaluate the specificity of the blocking peptide, protein levels of other LPA isoform (LPA3) and another USP11 substrate (ALK5) were determined. Further, the effects on LPA-induced signalling pathway were examined.

Summary of results A peptide, named LDPep, was identified to reduce the association between LPA1 and USP11. LDPep treatment reduced LPA1, but not LPA3 and ALK5, in lung epithelial cells, suggesting that LDPep promotes LPA1 degradation through disassociation between LPA1 and USP11. LPA treatment of lung epithelial cells induced phosphorylation of I-κB and MAPK, while the effects were attenuated by LDPep. LPA has been known to increase interleukin-8 release in human lung epithelial cells. Here, we found that LDPep pretreatment significantly reduced the effects of LPA.

Conclusions LDPep disrupts the association between LPA1 and USP11, thereby reducing LPA1 stability and LPA-mediated signalling pathway and cytokine release. This study reveals that LDPep is a specific inhibitor of LPA1 by regulating its stability. The anti-inflammatory property of LDPep in the setting of lung injury will be investigated in the future study.

4 GLYCA, A NOVEL INFLAMMATORY BIOMARKER, IS INVERSELY ASSOCIATED WITH AORTIC DISTENSIBILITY IN PATIENTS WITH PSORIASIS

[1]Leonard D Genovese*, [1]Aditya A Joshi, [1]Martin P Playford, [1]Parag Shukla, [1]Amit Dey, [1]Jacob W Groenendyk, [1]Youssef A Elnabawi, [1]Agastya D Belur, [1]Aditya Goyal, [1]Navya Nanda, [1]Mark A Ahlman, [1]Heather L Teague, [1]Yvonne Baumer, [2]Joel M Gelfand, [3]Alan T Remaley, [1]Nehal N Mehta. *[1]NHLBI, National Institute of Health, Washington, District of Columbia, USA; [2]Dermatology, University of Pennsylvania, Philadelphia, Pennsylvania, USA; [3]NIH, Bethesda, Maryland, USA*

10.1136/jim-2018-000730.4

Purpose of study Psoriasis (PSO), a chronic inflammatory disease associated with elevated levels of GlycA and increased burden of subclinical cardiovascular disease (CVD), provides an ideal human model to study the utility of novel inflammatory biomarkers in assessing subclinical CVD. While both GlycA and aortic distensibility (AD) are associated with prospective CV outcomes, their relationship in PSO is unclear. We hypothesised an inverse association between GlycA and AD in PSO.

Abstract 4 Table 1 Baseline characteristics of Psoriasis cohort

Parameter	Baseline (N=109)
Demographics and medical history	
Age, years	50.6 ± 13.3
Males	62 (57)
Body mass index (kg/m²)	29.0 ± 5.5
Statin use	36 (33%)
Hypertension	29 (27)
Hyperlipidemia	56 (51)
Type-2 diabetes mellitus	10 (9)
Current tobacco use	11 (10)
Clinical and laboratory values	
Total cholesterol (mg/dL)	182.7 ± 37.7
HDL cholesterol (mg/dL)	55.8 ± 18.5
LDL cholesterol (mg/dL)	100.7 ± 31.2
Triglycerides (mg/dL)	129.8 ± 84.3
Cholesterol efflux capacity	0.92 (0.84-1.04)
Framingham risk score	3.0 (1.0-7.0)
C-reactive protein (mg/L)	2.0 (0.71-4.22)
HOMA-IR	2.98 (1.76-4.95)
Glyc-A, mg/dL	413.8 ± 65.9
Psoriasis Characteristics	
Disease duration, years	20.6±14.7
Psoriasis area severity index score	5.7 (3.1-10.4)
Systemic/biologic treatment	37 (34)
Aortic Characterization	
Descending aortic distensibility (x10³), mm Hg⁻¹	6.35 ± 2.92

Values are reported as mean ± SD or median (IQR) for continuous variables and n (%) for categorical variables. HOMA-IR: homeostasis model assessment of insulin resistance.

Methods used 109 consecutive PSO patients underwent blood draws to measure GlycA by NMR spectroscopy, and phase contrast MRI scans to quantify AD as difference in aortic vessel area at peak systolic and trough diastolic pressure. The variables were assessed using a multivariable regression model.

Summary of results Patients were middle aged (mean age 50.6), at low CV risk (median Framingham risk 3), and were predominantly male (57%). GlycA was inversely associated with AD (b=−0.22, p=0.02) in unadjusted regression. Furthermore, this relationship persisted beyond adjustment for traditional CV and cardiometabolic risk factors, statins, and PSO treatment (b=−0.20, p=0.04).

Conclusions In conclusion, GlycA was inversely associated with AD independent of traditional CV risk. Whether this association operates through systemic inflammation or GlycA exerts direct effects on vasculature is not known. Future studies should focus on mechanisms relating GlycA and AD.

*5 AORTIC WALL THICKNESS BY MRI IS DIRECTLY RELATED TO NON-CALCIFIED CORONARY PLAQUE BURDEN BY QUANTITATIVE CORONARY CT ANGIOGRAPHY IN PATIENTS WITH PSORIASIS

Youssef A Elnabawi*, Jacob W Groenendyk, Amit Dey, Aditya Goyal, Agastya D Belur, Jonathan Chung, Parag Shukla, Mark A Ahlman, Aditya A Joshi, Martin P Playford, Marcus Y Chen, Nehal N Mehta. *NHLBI, National Institutes of Health, Bethesda, Maryland, USA*

10.1136/jim-2018-000730.5

Purpose of study Psoriasis (PSO), a chronic inflammatory disease associated with increased risk of MI, provides a reliable human model to study inflammatory atherogenesis. Non-calcified coronary plaque burden (NCB) by coronarycomputed tomography angiography (CCTA) as well as aortic wall thickness (AWT) by MRI are important markers of early subclinical atherosclerosis and have been shown to predict future CV events. We hypothesised that AWT would directly associate with NCB in PSO.
Methods used Consecutive PSO patients (n=111) underwent CCTA (320 detector row, Toshiba) for coronary plaque burden quantification using QAngio (Medis) and MRI to measure AWT in the descending aorta using dedicated software (Qplaque, Medis). Data were analysed using multivariable regressions (STATA 12).
Summary of results Patients were middle aged, predominantly males with low traditional CV risk scores and mildmoderate PSO severity (table 1). AWT was positively associated with NCB (β=0.14, p=0.009), which persisted beyond adjustment for traditional risk factors, antihypertensive use, statins, and systemic/biologic PSO treatment (β=0.11, p=0.041).
Conclusions AWT is positively associated with NCB independent of CV factors. These findings suggest that AWT and NCB may detect similar early processes of subclinical atherosclerosis, including diffuse intimal thickening with lipid deposition. Future studies should focus on understanding longitudinal changes in AWT and NCB to relate them to future CV events within the same population of patients.

Abstract 5 Table 1 Baseline characteristics of Psoriasis (PSO) subject cohort

Parameter	PSO (n=111)
Demographics and medical history	
Age, years	50.8± 13.2
Males	66 (59)
Race	
African American	5 (5)
Asian	6 (5)
Hispanic	2 (2)
White	91 (82)
Other	7 (6)
Waist-to-hip ratio	0.95 (0.88-1.00)
Hypertension	29 (26)
Hyperlipidemia	57 (51)
Statin treatment	36 (32)
Type-2 diabetes mellitus	10 (9)
Current smoker	10 (9)
Clinical and laboratory values	
Total cholesterol (mg/dL)	182.0 ± 37.7
HDL cholesterol (mg/dL)	56.4 ± 19.0
LDL cholesterol (mg/dL)	100.0 ± 31.2
Triglycerides (mg/dL)	126.7 ± 83.5
Cholesterol efflux capacity	0.95 ± 0.16
Framingham risk score	3 (1-7)
C-reactive protein (mg/L)	1.97 (0.71-4.4)
Insulin (mg/dL)	15.4 ± 14.6
Glucose (mg/dL)	99.4 ± 15.6
HOMA-IR	2.7 (1.7-4.6)
Psoriasis characterization	
PASI score	5.5 (2.8-10.0)
Systemic/biologic treatment	39(35)
Vascular characterization	
Coronary non-calcified burden (NCB), mm^2 (x100)	1.09 ± 0.05
Aortic wall thickness (WT), mm	3.46 ± 0.99

All values are expressed as Mean ± SD, unless specified otherwise. PASI- Psoriasis Area Severity Index, HOMA-IR- Homeostasis Model Assessment of Insulin Resistance.

*6

AMYGDALA ACTIVITY ASSESSED BY 18-FDG PET/CT IS ASSOCIATED WITH NON-CALCIFIED CORONARY PLAQUE BURDEN QUANTIFIED BY CORONARY COMPUTED TOMOGRAPHY ANGIOGRAPHY IN PSORIASIS

Aditya Goyal*, Tsion Aberra, Youssef A Elnabawi, Amit Dey, Jonathan Chung, Agastya D Belur, Jacob W Groenendyk, Abhishek Chaturvedi, Joseph Lerman, Joshua Rivers, Charlotte L Harrington, Nevin Varghese, Gregory Sanda, Heather L Teague, Yvonne Baumer, Justin Rodante, Mark A Ahlman, David Bluemke, Martin P Playford, Marcus Y Chen, Aditya A Joshi, Nehal N Mehta. *Cardiometabolic Diseases, National Heart, Lung and Blood Institute, Bethesda, Maryland, USA*

10.1136/jim-2018-000730.6

Purpose of study Psoriasis (PSO), a chronic inflammatory disease associated with increased prevalence of stress and coronary artery disease, provides a model to study the role of perceived stress in cardiovascular (CV) disease. While stress perception quantified as resting amygdala activity (RAA) is associated with prospective CV events, its association with indices of subclinical CV disease, such as non-calcified coronary plaque burden (NCB) is not well characterised. We hypothesised a direct association between RAA and NCB in PSO.
Methods used 157 consecutive PSO patients and 65 healthy volunteers (HV) underwent 18-FDG PET/CT and CCTA scans (Toshiba, 320-detector row). RAA was assessed as target-to-background ratio using Osirix MD. NCB was quantified utilising previously published methods (QAngio Medis). Data were analysed using multivariable regressions (STATA 12).
Summary of results Despite older age, both PSO and HV were at low CV risk by traditional risk score. RAA was more in

Abstract 6 Table 1 Baseline characteristics of study cohort

Parameter	PSO (N = 157)	Controls (N = 65)	p-value
Demographics and medical history			
Age, years	49.9 ± 13.1	35.9 ± 13.2	**<0.001**
Males	88 (56)	47 (72)	**0.02**
Ethnicity, Caucasians	126 (80)	43 (66)	**0.002**
Hypertension	43 (27)	8 (12)	**0.02**
Hyperlipidemia	76 (48)	15 (25)	**0.001**
Type 2 diabetes mellitus	15 (10)	4 (6)	0.41
Current tobacco use	15 (10)	4 (6)	0.44
Lipid treatment	51 (32)	8 (13)	**0.002**
Body mass index	29.4 ± 5.9	26.7 ± 5.0	**<0.001**
Waist-to-hip ratio	0.95 (0.88 - 1.0)	0.94 (0.88 - 0.99)	0.29
Clinical and laboratory values			
Total cholesterol, mg/dL	181.8 ± 36.7	176.2 ± 36.9	0.15
HDL cholesterol, mg/dL	55.9 ± 17.7	56.1 ± 17.3	0.47
LDL cholesterol, mg/dL	101.2 ± 30.4	96.9 ± 31.8	0.18
Triglycerides, mg/dL	121.9 ± 76.1	115.8 ± 87.8	0.30
Framingham risk score	2.0 (0.6 - 5.8)	1.3 (0.5 – 4.6)	0.13
C-reactive protein, mg/L	1.9 (0.8 - 4.5)	1.1 (0.6 - 2.5)	**0.004**
Psoriasis Characterization			
Psoriasis area severity index score	5.7 (3.0 - 9.8)	-	-
Systemic or biologic treatment	57 (36)	-	-
Coronary Plaque Burden			
Total Burden, mm^2	1.14 ± 0.45	1.02 ± 0.32	**<0.001**
Non-Calcified Burden, mm^2	1.09 ± 0.44	1.00 ± 0.32	**0.006**
Dense-Calcified Burden, mm^2	0.04 ± 0.09	0.01 ± 0.01	**<0.001**
Amygdalar Activity (FDG PET/CT)			
Target-to-background ratio	1.10 ± 0.11	1.04 ± 0.11	**<0.001**

Values reported in the table as Mean ± SD or Median (IQR) for continuous data and N (%) for categorical data. P value less than 0.05 deemed significant. P values were calculated by using student's t-test or Mann-Whitney U test for continuous variables and Pearson's chi-squared test for categorical variables.

PSO compared to HV (table 1). RAA had a direct association with NCB (b=0.27, p<0.001), that persisted beyond adjustment for traditional risk factors, statins and PSO treatment (b=0.20, p<0.001). No similar relationship was seen in HV.
Conclusions In conclusion, NCB is associated with RAA in PSO, suggesting a role for perceived stress in subclinical CV disease in patients with chronic inflammatory disease states such as PSO. However, larger prospective studies are needed.

*7 REDEFINING BRONCHIOLITIS: RESPIRATORY PHENOTYPING OF VIRAL LOWER RESPIRATORY TRACT INFECTIONS IDENTIFIES SUBSETS WITH DISTINCT ACUTE SEVERITY AND RECURRENCE OF RESPIRATORY ILLNESSES IN YOUNG CHILDREN

[1]Morr Maria A Arroyo*, [1]Kyle Salka, [1]Geovanny Perez, [1]James Jackson, [1]Dinesh Pillai, [2]Carlos Rodriguez Martinez, [1]Gustavo Nino. *[1]Pulmonary, Children's National Health System, Washington, District of Columbia, USA; [2]Neumologia, Bogota, Colombia*

10.1136/jim-2018-000730.7

Purpose of study Although viral lower respiratory tract infections (LRTI) in young children are typically grouped as a single disease (viral bronchiolitis), our recent data suggest that not all LRTI are the same. Using standardised clinical scores we identified two phenotypes in viral LRTI: *wheezing phenotype* characterised by lower respiratory obstruction (wheezing/air trapping) and *parenchymal lung disease phenotype* characterised by tachypnea, hypoxemia and lung opacities. We aimed to define these viral LRTI phenotypes in terms of acute severity, recurrence and viral-induced airway cytokine responses.
Methods used A cross-sectional analysis of respiratory scores of full-term children aged ≤3 years with PCR-confirmed viral LRTI requiring hospitalisation. We categorised all subjects into wheezing phenotype or parenchymal lung disease phenotype based on standardised scores. Nasal airway cytokines (IFNγ,IL-12p,IL-10,IL-4,IL-13,IL-1β,TNFα) were obtained in all subjects.
Summary of results Study included 77 children with viral LRTI and 23 uninfected age-matched controls. We identified that 56% (n=43) children with viral LRTI had parenchymal lung disease phenotype and 44% (n=34) had wheezing phenotype. Children with viral LRTI wheezing phenotype had more recurrent ER-visits/hospitalizations (n=26 vs n=11; p<0.0001). Children with viral LRTI parenchymal lung phenotype had more episode of acute respiratory failure requiring mechanical ventilation (n=8 vs. n=1; p<0.03). Multivariate analysis demonstrated that phenotype-based differences in recurrent LRTI and respiratory failure were independent of age, gender, race or viral pathogen. Nasal cytokine levels were higher for all molecules in children with viral LRTI relative to controls (p<0.05).
Conclusions We identified a clinically relevant way to phenotype viral LRTI in young children that may predict acute respiratory failure and recurrent wheezing. Molecular studies suggest that these phenotypes represent distinct pathogenic process. Our results linked suppressed viral-induced airway immune responses to recurrent LRTI in individuals with parenchymal lung disease phenotype but not in the wheezing phenotype.

*8 INTERLEUKIN-1 BETA IS ASSOCIATED WITH AORTIC VASCULAR INFLAMMATION ASSESSED BY 18-FDG PET/CT IN PATIENTS WITH PSORIASIS

[1]Agastya D Belur*, [1]Youssef A Elnabawi, [1]Amit Dey, [1]Aparna A Sajja, [1]Aditya Goyal, [1]Charlotte L Harrington, [1]Jacob W Groenendyk, [1]Heather L Teague, [1]Yvonne Baumer, [1]Navya Nanda, [2]Mark A Ahlman, [1]Aditya A Joshi, [1]Martin P Playford, [1]Nehal N Mehta. *[1]NHLBI, National Institutes of Health, Bethesda, Maryland, USA; [2]National Institute of Biomedical Imaging and Bioengineering, National Institutes of Health, Bethesda, Maryland, USA*

10.1136/jim-2018-000730.8

Purpose of study Psoriasis (PSO), a chronic inflammatory disease, provides a human model to study the association between inflammatory cytokines and vascular inflammation (VI), a reliable surrogate for cardiovascular (CV) risk. Recent evidence demonstrated a reduction in adverse CV events following interleukin-1 beta (IL1β) inhibition in patients with high residual inflammatory risk defined by high sensitivity CRP ≥2 mg/L. The relationship between IL1β and VI in PSO is unknown. We hypothesised higher IL1β in PSO than controls, and an association of IL1β with VI in PSO.
Methods used 127 consecutive PSO patients received 18-FDG PET/CT for VI assessment. To understand human physiology of IL1β, we deliberately enrolled 24 young, healthy controls (HC). IL1β was quantified by ELISA assays. PSO patients were stratified by disease severity into 2 groups. Analyses included three-group comparisons and multivariable regression (STATA 12).
Summary of results We observed an increasing trend for IL1β concomitant with a similar trend for VI (Image). VI was associated with IL1β in PSO (β=0.21, p=0.02), and this relationship persisted beyond adjustment for traditional CV risk factors, statins and PSO treatment (β=0.15, p=0.04). HC demonstrated no such relationship.
Conclusions IL1β was associated with VI in PSO, suggesting a potential role of IL1β inhibition to curb subclinical CV risk in patients with chronic inflammatory diseases. However, larger prospective and randomised studies are needed to validate our findings.

Abstract 8 Table 1 Characteristics of study populations stratified by Psoriasis severity

Parameter	Controls (n=24)	Mild to Moderate PSO (n=92)	Severe PSO (n=35)	p-value
Demographics and medical history				
Age, years	29.6 ± 9.2	51.6 ± 12.7	47.5 ± 12.3	**<0.001**
Males	16 (67)	51 (55)	27 (77)	0.07
Ethnicity, Caucasians	16 (67)	77 (84)	24 (69)	**0.002**
Hypertension	0 (0)	24 (26)	10 (29)	**0.02**
Hyperlipidemia	0 (0)	47 (51)	14 (40)	**<0.001**
Type-2 diabetes mellitus	0 (0)	10 (11)	4 (11)	0.23
Current tobacco use	0 (0)	9 (10)	4 (11)	0.25
Lipid treatment	0 (0)	35 (38)	9 (26)	**0.001**
Body mass index, kg/m^2	23.9 ± 2.8	29.4 ± 5.4	29.1 ± 6.3	**0.001**
Clinical and laboratory values				
Total cholesterol, mg/dL	163.8 ± 28.2	181.1 ± 34.4	181.5 ± 40.4	0.09
HDL cholesterol, mg/dL	63.0 ± 19.7	54.4 ± 16.8	56.6 ± 16.5	0.10
LDL cholesterol, mg/dL	84.1 ± 21.1	102.7 ± 28.5	104.7 ± 33.4	0.27
Triglycerides, mg/dL	77 (72-86)	101 (78-136)	95 (68-141)	**0.01**
Framingham risk score	1 (1-1)	2.5 (1-6)	3 (1-6)	**<0.001**
HOMA-IR	1.6 (1.0-2.4)	2.7 (1.6-4.7)	2.5 (1.5-4.6)	**0.001**
High sensitivity C-reactive protein, mg/L	0.9 (0.5-2.8)	1.8 (0.7-4.3)	2 (0.7-3.5)	0.10
Psoriasis characterization				
Disease duration, years	-	20 (9.5-30.5)	15 (8-22)	0.07
PASI score	-	4.1 (2.5-6.6)	14.7 (12.3-19.2)	**<0.001**
Systemic/biologic therapy	-	6 (7)	1 (3)	0.43
Vascular inflammation				
Aortic target-to-background ratio	1.50 ± 0.10	1.70 ± 0.24	1.74 ± 0.34	**<0.001**
Cytokines				
Interleukin-1β, pg/mL	0.08 (0.04-0.13)	2.53 (2.02-3.16)	2.72 (2.12-3.13)	**<0.001**

Values reported as Mean ± SD or Median (IQR) for continuous data and N (%) for categorical data. P value less than 0.05 deemed significant. P values were reported for trend across all three groups using ANOVA test or Kruskal-Wallis equality of populations rank test for continuous data and Pearson's chi-squared test for categorical data. HOMA-IR: Homeostasis model assessment of insulin resistance; PASI: psoriasis area severity index. Mild-to-moderate psoriasis: PASI score <10; severe psoriasis: PASI score≥10.

*9 IMPROVEMENT IN LARGE DENSITY HDL PARTICLE NUMBER BY NMR IS ASSOCIATED WITH IMPROVEMENT IN VASCULAR INFLAMMATION BY 18-FDG PET/CT AT ONE-YEAR IN PSORIASIS

[1]Amit Dey*, [1]Martin P Playford, [1]Aditya A Joshi, [1]Agastya D Belur, [1]Aditya Goyal, [1]Youssef A Elnabawi, [1]Jacob W Groenendyk, [1]Jonathan Chung, [1]Joshua Rivers, [1]Justin Rodante, [1]Leonard D Genovese, [1]Aparna A Sajja, [1]Charlotte L Harrington, [1]Nevin Varghese, [1]Parag Shukla, [1]Tsion Aberra, [1]Heather L Teague, [1]Yvonne Baumer, [1]Alan T Remaley, [1]Mark A Ahlman, [2]Joel M Gelfand, [1]Nehal N Mehta. *[1]Cardiology, NHLBI, NIH, Bethesda, Maryland, USA; [2]University of Pennsylvania, Philadelphia, Pennsylvania, USA*

10.1136/jim-2018-000730.9

Purpose of study Psoriasis (PSO), a chronic inflammatory disease associated with dysfunctional lipoprotein profile and increased vascular inflammation (VI) by 18-FDG PET/CT, provides a reliable human model to study the effect of lipoprotein modulation on progression of subclinical cardiovascular disease (CVD). Large HDL particle (l-HDLp) number by NMR has been shown to associate negatively with CV events independent of traditional lipoprotein levels, VI provides a reliable surrogate for subclinical CVD. We hypothesised that increase in l-HDLp would associate with a decrease in VI.

Methods used Consecutive non-hyperlipidemic, treatment nave PSO patients (n=46) underwent 18-FDG PET/CT scans at baseline and one-year to assess VI as target-to-background ratio. Lipoprotein profiling was done by NMR.

Abstract 9 Table 1 Characteristics of Psoriasis patients at baseline and one-year

Parameter	Baseline (n=46)	One-year (n=46)	p-value
Demographics and medical history			
Age, years	45.7 ± 12.8	46.8 ± 12.9	**<0.001**
Males	27 (49)	27 (49)	1.00
Body mass index (kg/m²)	28.0 ± 6.1	27.7 ± 5.4	0.2
Waist-to-hip ratio	0.95 (0.91-0.99)	0.95 (0.91-0.98)	0.96
Hypertension	6 (13)	6 (13)	1.00
Type-2 diabetes mellitus	3 (7)	3 (7)	1.00
Current tobacco use	7 (15)	6 (13)	0.32
Statin use	1 (2)	3 (7)	0.16
Clinical and laboratory values			
Total cholesterol (mg/dL)	178.2 ± 33.4	179.3 ± 36.2	0.40
HDL cholesterol (mg/dL)	56.8 ± 18.5	58.9 ± 21.1	0.13
LDL cholesterol (mg/dL)	102.4 ± 26.7	99.3 ± 33.2	0.2
Triglycerides (mg/dL)	91 (68-112)	92 (75-124)	**0.04**
Small HDL particle number	18.3 (15.6-21.2)	16.0 (12.4-21.9)	0.09
Large HDL particle number	5.1 (2.9-8.9)	6.1 (4.2-9.0)	**0.03**
Small LDL particle number	414 (328-660)	390 (256-544)	0.67
Large LDL particle number	399 (270-517)	431 (218-581)	0.50
Cholesterol efflux capacity	0.92 (0.84-1.01)	0.98 (0.87-1.04)	0.11
Framingham risk score	2 (1-3)	1 (1-3)	0.1
High sensitivity C-reactive protein (mg/L)	2.4 (0.7-7.2)	1.8 (0.7-4.4)	0.13
HOMA-IR	2.2 (1.4-3.3)	2.2 (1.2-3.7)	0.71
Psoriasis characterization			
Psoriasis area severity index score	7.4 (3.4-12.3)	3.9 (2.1-6.7)	**<0.001**
Systemic/biologic treatment	0 (0)	18 (39)	**<0.001**
Vascular inflammation			
Aortic target-to-background ratio	1.78 ± 0.23	1.72 ± 0.16	**0.04**

Values are reported as mean ± SD/median (IQR) for continuous variables and n (%) for categorical variables. P-values were calculated by Student t-test for normally distributed continuous variables and by Mann-Whitney U-test for non-normally distributed continuous variables. Pearson's chi-square test was performed for categorical variables. HOMA-IR: homeostasis model assessment of insulin resistance. P-value<0.05 deemed significant.

Summary of results PSO patients were middle-aged, and at low CV risk by traditional risk scores (table 1). At one-year, despite no change in traditional lipid profile, l-HDLp increased [5.1 (2.98.9) vs. 6.1 (4.29.0), p=0.03] concurrent with improved PSO severity. VI improved at one-year (1.78 0.23 vs. 1.72 0.16, p=0.05), and this improvement was associated with l-HDLp increase beyond traditional CV risk factors (b=−0.50, p=0.01).

Conclusions Increase in l-HDLp was inversely associated with improvement in VI, suggesting a role for routine NMR lipoprotein characterisation in assessment of CVD in PSO. However, larger prospective studies with CV outcomes are needed.

*10 INHIBITION OF THE SCFFBX03 E3 LIGASE AS A NOVEL ANTI-INFLAMMATORY THERAPY FOR ATHEROSCLEROSIS

Divay Chandra*, James Londino, Bill Chen, Rama Mallampalli. *Medicine, University of Pittsburgh, Pittsburgh, Pennsylvania, USA*

10.1136/jim-2018-000730.10

Purpose of study Atherosclerosis is a chronic inflammatory disease. Oxidatively modified low-density lipoproteins (OxLDL) are deposited in the subendothelial space of systemic arteries early in atherosclerosis. This OxLDL ligates the CD36 scavenger receptor on the surface of macrophages thereby activating NFkB with the help of TRAF proteins resulting in the secretion of pro-inflammatory mediators central to atherosclerosis. The SCF^{FBXO3} E3 ubiquitin ligase governs the stability of TRAF proteins that link signalling from cell-surface receptors such as CD36 with NFkB. Therefore, we hypothesised that SCF^{FBXO3} modulates the inflammatory response to OxLDL in macrophages and impacts the risk of atherosclerosis.

Methods used In 146 current and prior smokers FBXO3 genotyping was performed using DNA extracted from PBMCs, while carotid atherosclerosis was quantified by ultrasound. Surgically excised carotid plaque from an unrelated group of 9 individuals was immunoblotted for FBXO3. The role of FBXO3 in modulating OxLDL uptake and inflammation was examined using a monocytic cells line (THP-1).

Summary of results 24 smokers with a hypofunctioning genetic variant of FBXO3 had fewer plaque and less thickening of the carotid intima-media compared with 122 individuals with wild-type FBXO3. In adjusted analyses, those with the hypofunctioning variant were at 62% lower odds of being in a higher category of severity of carotid atherosclerosis compared to those with wide-type FBXO3 (odds ratio=0.38, 95% CI: 1.02 to 6.49, p=0.04). There was a close to 4-fold increase in FBXO3 protein levels in carotid plaque from those with severe rather than asymptomatic atherosclerosis. The phosphorylation of NFkB induced by OxLDL was prevented by cellular depletion of FBXO3. Similarly, secretion of pro-inflammatory cytokines IL1β, IL8, and TNFα was reduced by depletion of FBXO3. Levels of FBXO3 protein were not altered by exposure of the cells to OxLDL.

Conclusions High-level expression of the FBXO3 E3 ligase subunit increases the risk of atherosclerosis, and FBXO3 protein levels in carotid plaques are increased in those with more severe atherosclerosis. Suppression of FBXO3 protein levels in macrophages abolished the inflammatory response to oxidised LDL. Thus, the SCF^{FBXO3} E3 ligase is a potential novel target for anti-inflammatory therapy in atherosclerosis.

*11 IMPROVEMENT IN SKIN DISEASE SEVERITY IS ASSOCIATED WITH REDUCED PROGRESSION OF AORTIC WALL THICKNESS IN PATIENTS WITH PSORIASIS

Jacob W Groenendyk*, Parag Shukla, Agastya D Belur, Amit Dey, Youssef A Elnabawi, Justin Rodante, Aditya Goyal, Ahmed Sadek, Navya Nanda, Mark A Ahlman, Aditya A Joshi, Martin P Playford, Nehal N Mehta. *NHLBI, National Institutes of Health, Bethesda, Maryland, USA*

10.1136/jim-2018-000730.11

Purpose of study Psoriasis (PSO), an inflammatory disease associated with increased subclinical atherosclerosis (ScA), provides a useful *in vivo* model for investigating the atherogenesis. Aortic wall thickness (AWT) is known to be associated with prospective cardiovascular events. The effect of modulating skin inflammation in PSO on AWT is poorly understood. We hypothesised that improvement in skin inflammation would prevent increase in AWT.
Methods used 177 consecutive PSO patients underwent magnetic resonance imaging at baseline and one year. AWT in the descending aorta was measured using dedicated software (Qplaque 1.0, MEDIS). PSO severity was assessed by Psoriasis Area Severity Index Score (PASI).
Summary of results Patients were middle-aged (mean 50.4) with low Framingham risk score (FRS) (median 3.0). Age, FRS, cholesterol efflux capacity (CEC), diabetes, hyperlipidemia, and TNF-α significantly associated with AWT at baseline. At one year, AWT of patients with improved PASI (median −57%) did not increase (median, IQR 3.5, 33.8 vs 3.4, 3.23.8; p=0.46), however worsening PASI was associated with increase in AWT (3.2, 33.5 vs. 3.5, 3.33.8; p=0.02).
Conclusions Significant determinants of AWT in PSO include TNF-α, CEC, and traditional cardiovascular risk factors. Reducing skin inflammation is associated with cessation of AWT progression, suggesting that modulation of skin inflammation may prevent progression of ScA. However, larger randomised studies are needed to confirm these findings.

*12 ATHEROSCLEROSIS IN AUTOIMMUNE RHEUMATIC DISEASES: COMPARISON OF PLASMA EFFECTS ON MACROPHAGE CHOLESTEROL BALANCE *IN VITRO*, AND CORRELATION TO TRADITIONAL CARDIOVASCULAR DISEASE CLINICAL RISK FACTORS

[1]Andrew Maidhof*, [2]Lora J Kasselman, [1,2]Steven Carsons, [1]Elise Belilos, [1]Kristina Belostocki, [1]Gary Rosenblum, [1]Lois Bonetti, [2]Melissa Fazzari, [1]Joshua DeLeon, [1,2]Allison B Reiss. *[1]Medicine, NYU Winthrop Hospital, Mineola, New York, USA; [2]Winthrop Research Institute, NYU Winthrop Hospital, Mineola, New York, USA*

10.1136/jim-2018-000730.12

Purpose of study Atherosclerotic cardiovascular disease (ASCVD) risk is elevated in rheumatoid arthritis (RA), lupus (SLE) and, to a lesser extent, psoriatic arthritis (PsA). Dysfunctional cholesterol handling underlies mechanisms that promote atherosclerosis. This study compares the effects of RA, PsA, and SLE plasma on genes that modulate cholesterol influx, catabolism, and efflux and tests the relationship between traditional CVD risk factors and *in vitro* cholesterol transport gene expression.
Methods used THP-1 human macrophages were incubated in 10% plasma from 8 RA; 12 SLE, 22 PsA and 21 healthy control (HC) subjects. Cholesterol transport mRNA was quantified by QRT-PCR. Statistical analysis was performed using Graphpad Prism. All data were analysed by one-way ANOVA, and pairwise multiple comparisons were made between control and treatment conditions using Bonferroni correction.
Summary of results SLE plasma increased scavenger receptor (SR) expression. CD36 mRNA increased to 22056% ($p<0.001$), LOX-1% to 20222% ($p<0.001$), and SR-A1% to 12245% vs. HC plasma (set at 100%). Efflux genes were suppressed: ABCA1 mRNA decreased to 7747%, ABCG1% to 8933%, and 27-hydroxylase (27-OH) to 2048% vs. HC. RA plasma increased CD36% to 157111%, SR-A1% to 12419%, and LOX-1% to 10253% vs. HC. Mean ABCA1 mRNA decreased to 6628% ($p<0.001$), ABCG1% to 6547% ($p<0.05$), and 27-OH to 32.514.2% ($p<0.01$) in RA vs. HC plasma. PsA plasma did not significantly alter mRNA of influx or efflux genes. ABCA1 had a positive correlation with CRP across all autoimmune diseases studied. ($R^2=0.16$, $p=0.041$), as well as with HDL level ($R^2=0.26$, $p=0.007$). 27OH had a negative correlation with age across all disease states ($R^2=0.19$, $p=0.05$).
Conclusions Consistent with clinic evidence, SLE and RA plasma induced a uniformly pro-atherogenic profile of cholesterol flux genes. PsA plasma was less atherogenic, reflecting the lesser disease-related ASCVD risk. These results identify cholesterol transport genes as a potential new predictive biomarker and therapeutic target for ASCVD prevention in the setting of autoimmunity.

SCIENTIFIC SESSION II

Hematology, Oncology, Neuroscience & Gastroenterology/Hepatology

12:45 PM – 2:45 PM

13 THE MECHANISM OF HOMOLOGOUS RECOMBINATIONS UPREGULATION IN THE P53/P21^{WAF1}-COMPROMISED CELLS: IMPLICATIONS FOR DRUG RESISTANCE TO CAMPTOTHECIN

[1,2]Larisa Y Romanova*, [1]JF Mushinski, [2]AL Kovalchuk. *[1]Center for Cancer Research, National Cancer Institute, NIH, Sherborn, Massachusetts, USA; [2]Virology and Cellular Immunology Section, Laboratory of Immunogenetics, National Institute of Allergy and Infectious Diseases, NIH, Rockville, Maryland, USA*

10.1136/jim-2018-000730.13

Purpose of study Upregulation of homologous recombinations (HR) following inactivation of the p53/p21^{Waf1} axis is critical for the acquisition of drug resistance to camptothecin (CPT). We earlier reported that the inhibitory effect of p53 on homologous recombinations (HR) is exerted through the sequestration of Replication Protein A (RPA) and formation of a stable p53/RPA complex (Romanova *et al. Oncogene* 2004;23(56):9025). Here we investigated the mechanism underlying upregulation of HR in the p53/p21^{Waf1}-compromised cells undergoing replication arrest by CPT.
Methods used We used nocodazole-synchronised p53-positive human alveolar basal epithelial cell line A549 treated with CPT at the entrance to S phase. The cells proceed through S phase and enter G2 irrespectively of p53/21Waf1 status (figure 1C). The chromosomally-integrated pDR-GFP substrate (Pierce, *et al. Genes & Dev* 1999;13(20), was used for HR analysis.

Western blotting with the respective antibody was used to assess the levels and phosphorylation status of the proteins. A replacement of the endogenous RPA2 subunit of RPA with its recombinant phosphorylation mutants was performed as described (Vassin *et al*. *Mol Cell Biol* 2004, 24(5)).

Summary of results In response to CPT, transcriptional activation of the p53 downstream target $p21^{Waf1}$ impedes RPA phosphorylation within its RPA2 subunit (figure 1A) and stabilises p53/RPA complex (figure 1B), while inactivation of p53 or $p21^{Waf1}$ stimulates RPA phosphorylation and releases RPA from the complex with p53. This is responsible for the inhibition of HR in wild-type cells and upregulation of HR in the $p53/p21^{Waf1}$-compromised ones (figure 1D).

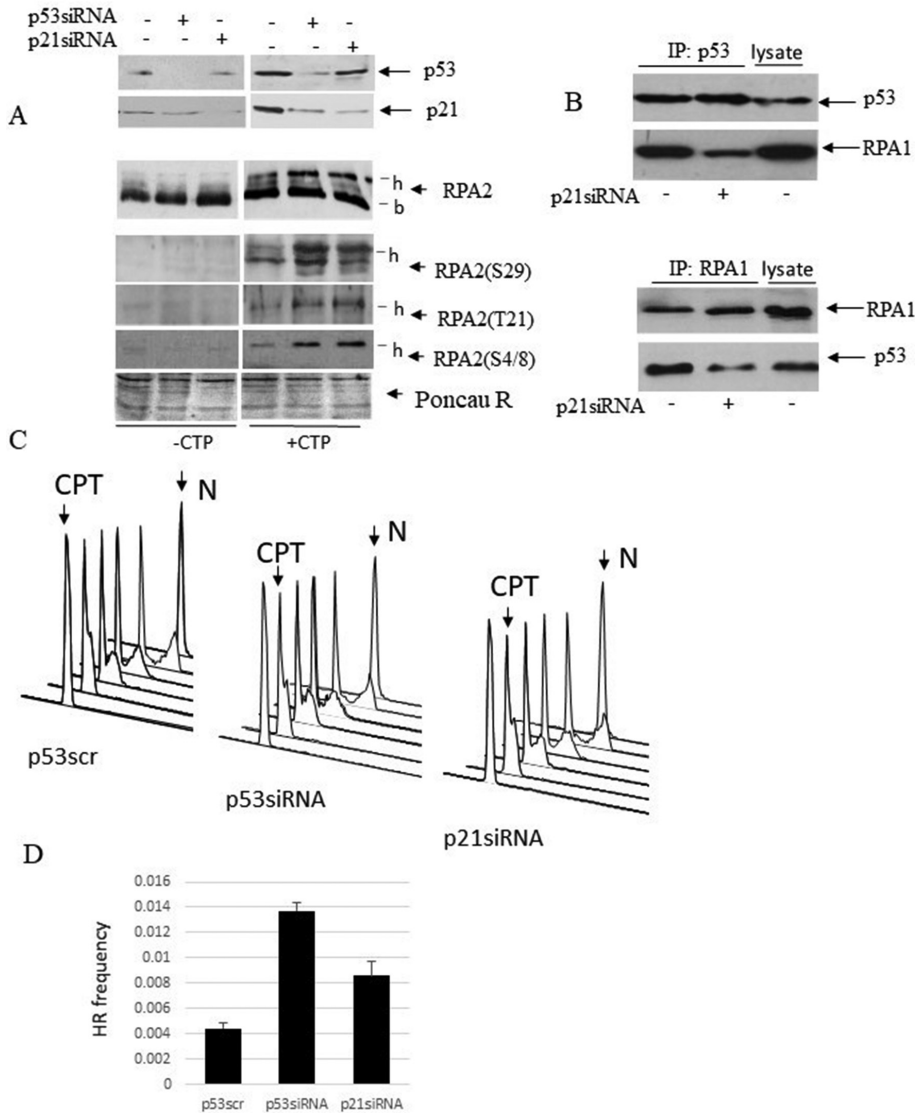
Conclusions Thus, we show that in CPT treated cells p53-induced transcriptional activation of $p21^{Waf1}$ regulates HR rates by affecting RPA phosphorylation and the stability of the RPA/p53 complex. By repairing the most detrimental type of DNA damage; double-strand breaks, upregulated HR allow the $p53/p21^{Waf1}$-compromised cells to proceed through the cell cycle and to evade cell death, thus contributing to CPT drug resistance.

14 MANAGEMENT OF REFRACTORY ANTI-PHOSPHOLIPID SYNDROME

[1]Babak Baseri*, [1]Alina Bhat, [1]Bachar Samra, [1,2]Jason Gonsky. [1]*Department of Haematology and Oncology, SUNY Downstate Medical Centre, Brooklyn, New York, USA*; [2]*Department of Haematology and Oncology, Kings County Hospital, Brooklyn, New York, USA*

10.1136/jim-2018-000730.14

Purpose of study Rituximab may play a role in refractory cases of Catastrophic Anti-Phospholipid Syndrome (CAPS). However, there is no strong evidence for rituximab in resistant



Abstract 13 Figure 1 A. The effect of p53 or $p21^{Waf}$ siRNA depletion on the overall RPA2 phosphorylation or phosphorylation at the residues Ser29, Tyr21 and Ser4/8. B. The stability of p53/RPA complex following $p21^{Waf1}$ siRNA silencing was analysed after p53 or RPA1 immunoprecipitation. C. Cell cycle progression of A549 cells following mitotic arrest by nocodazole and CPT treatment at the entrance into S phase. D. The HR frequencies were analysed in A549 cells carrying recombinant reporter construct, pDR-GFP. Chi-square tests detected significant differences between p21siRNA and p53siRNA depleted cells (Chi-sq=26.3; p<0.0001), between p21siRNA-depleted cells and control (Chi-sq = 30.0; p < 0.0001) and between cells depleted of p53 by siRNA and controls (Chi-sq=104.0; p<0.0001)

cases of non-catastrophic APS that have failed optimal anticoagulation. We describe a case of refractory APS that was treated successfully with rituximab and enoxaparin.
Methods used A 35 year-old Afro-Caribbean man with history of hypertension presented in February 2016 with pleuritis and exudative pleural effusion of unknown aetiology that resolved without intervention. In July 2016, he had an unprovoked left lower extremity deep vein thrombosis (DVT) and was started on rivaroxaban. The patient was compliant for the first 3 months but only intermittently afterwards and presented with bilateral pulmonary emboli in January 2017. Enoxaparin (1.5 mg/kg daily) was initiated. Hypercoagulable workup revealed anti-phospholipid antibody syndrome with positive anti-cardiolipin IgG antibody and lupus anticoagulant. He was re-admitted the following week with acute right external iliac DVT while on enoxaparin. Thrombolysis and illiofemoral thrombectomy were performed. Enoxaparin was changed to 1 mg/kg twice daily. Two months later, the patient developed a new right lower extremity DVT while on enoxaparin and underwent thrombectomy, thrombolysis, balloon angioplasty, and stent placement. Due to history of refractory APS, several steps were taken including enoxaparin dose increase by 20% (1.2 mg/kg BID, anti-factor XA activity 0.7 within therapeutic range 0.51.1), and aspirin and rituximab initiation (375 mg IV weekly x 4 doses, followed by maintenance rituximab q3 months). He has had no thromboembolic events for the past seven months.
Summary of results The patient has had no thromboembolic events since initiation of rituximab. Anticardiolipin antibody titers have decreased since diagnosis. Recent autoimmune disease work up revealed +ANA (titer 1:6400) and +anti dsDNA, which in combination with history of pleuritis and APS, meet SLICC criteria for Systemic Lupus Erythematosus.
Conclusions Our case adds to current limited evidence that rituximab may reduce risk of recurrent thromboembolism in patients with refractory APS who have failed standard anticoagulation.

15 DIFFERENTIAL CIRCULATING MICRORNA EXPRESSION IN HEALTHY BLACK AND WHITE WOMEN MAY ACCOUNT FOR DIFFERENTIAL CANCER INCIDENCE AND OUTCOMES

[1]Iuliana Shapira*, [1]Paul Abrudescu, [1]Erica Testani, [1]Ameer Aboud, [2]Annette Lee. *[1]Medicine, SUNY Downstate, Brooklyn, New York, USA; [2]Genomic and Genetic, Feinstein Institute for Medical Research, Manhasset, New York, USA*

10.1136/jim-2018-000730.15

Purpose of study Black women exhibit higher cancer related mortality compared to whites. In addition to socioeconomic influences, biological factors are believed to play critical roles in cancer disparities. We investigated miRs may be differentially expressed in healthy black and white women. We have analysed the circulating microRNAs of black and white healthy women and found significant differences
Methods used 12 healthy women a mean age of enrollment of 38 years (range of 2542); there were 6 Whites and 6 Blacks. Circulating miRs were detected using TaqMan OpenArray microarray techniques to analyse the global expression of plasma miRNAs. DataAssist 3.0 was employed to export the raw cycling threshold (CT) values and data analysed with R/Bioconductor package LIMMA. Comparisons with moderated t-test and P-values will be adjusted for multiple testing via the Benjamin-Hochberg method. Fold changes for each miRNA were calculated using 2- delta-delta Ct where the cycle threshold delta-delta Ct is the difference between delta Ct (cancer) minus delta Ct (control). An adjusted $p \leq 0.05$ will be considered statistically significant as long as miRNA expression is at least 2-fold different and expression is present in at least 75% of samples.
Summary of results Ten miRs were found in all samples and differentially expressed between in the 2 groups ($p<0.005$) Functional studies with microRNAs suffer from absence of minority representation, thus when over-expression studies are performed it should be taken into account population specific differences in expression.
Conclusions The complex biology of microRNAs increases the obstacles toward a full comprehension of these small non-coding RNAs. Many of these population-specific/-enriched miRNAs could be paired with target mRNAs that exhibited an inverse pattern of differential expression may reveal the cause of health disparities between populations. Understanding the origins and aetiology of cancer disparities is a complex endeavour and it is imperative that such disparities be addressed at all levels of intervention, both social and biological. One component of the disparity may be related to biological differences in the molecular causation of health and disease.

16 AUTOIMMUNE HEPATITIS- SYSTEMIC LUPUS ERYTHEMATOSUS OVERLAP SYNDROME

Vijayram Reddy Malladi*, Ahmed Al-Khazraji, Zhenghui Gordon Jiang, Daryl Lau. *Medicin, Beth Israel Deaconess Medical Centre and Harvard Medical School, Boston, Massachusetts, USA*

10.1136/jim-2018-000730.16

Purpose of study None
Methods used None
Summary of results Case Report
Conclusions Autoimmune hepatitis (AIH) is characterised by the presence of autoantibodies including antinuclear antibodies (ANA) and IgG hypergammaglobulinemia. Systemic Lupus Erythematosus (SLE) can be associated with lupus hepatitis. It is crucial to distinguish these two entities as the course of the disease is different. They can co-exist and is referred to AIH-SLE overlap syndrome. Patient is a 52-year-old White female with liver biopsy-confirmed AIH with mild stage 01 hepatic fibrosis in 2014. She received a tapering course of prednisone initially and her disease had been in remission with maintenance azathioprine at 100 mg daily. In September 2017, she presented with progressive dyspnea, arthralgia and fatigue and was found to have small inactive nasal and oral ulcers. Subsequent evaluations noted bilateral pleural effusions, new onset splenomegaly (16 cm), lymphadenopathy on CT scan, elevated serum aminotransferases, leukopenia and markedly elevated C reactive protein at 91.8 mg/dl. Acute CMV hepatitis was suspected with positive IgM and negative IgG titers. She was started on valacyclovir but stopped when the initial CMV viral load returned negative. Of note, her mother had history of lymphoma. Haematological malignancies were ruled out by lymph node and bone marrow biopsies. Her dyspnea worsened requiring oxygen supplement. Thoracocentesis yielded exudative effusion with negative culture and cytology. Further evaluation reported positive anti-Smith, dsDNA, SS-A, low C3, elevated ANA titer at 1:640, and persistent cytopenias. When she presented with active AIH in 2014, the ANA titer was

lower at 1:80. Rheumatologic consultation concluded that her recent presentation was most consistent with new onset SLE. Her clinical manifestations met at least 3 diagnostic criteria including serositis, oral/nasal ulcers, leukopenia, and arthritis per 2012 SLICC SLE classification criteria. This case illustrated the importance to consider lupus hepatitis even in patients with firmly established diagnosis of AIH especially if the liver condition has been in remission. In addition, patients with autoimmune diseases can have nonspecific antibodies such as reactive anti-CMV IgM. Direct PCR assay to confirm active viral illness is essential.

17 EXPRESSION OF PLASMA CIRCULATING MICRORNA(C-MICRORNAS) CHANGES WITH DIFFERENT COLLECTION/ STORING TECHNIQUES IMPLICATION FOR STANDARDISED REPORTING METHODS

[1]Iuliana Shapira*, [1]Paul Abrudescu, [1]Erica Testani, [1]Ameer Aboud, [2]Annette Lee. *[1]Medicine, SUNY Downstate, Brooklyn, New York, USA; [2]Genomics and Genetics, Feinstein Institute for Medical Research, Manhasset, New York, USA*

10.1136/jim-2018-000730.17

Purpose of study Method of blood collection and processing may influence results. We sought to understand the effect of sample collection and processing on plasma microRNA expression. A methodological workflow for the prospective validation of a circulating miRNA test using quantitative Real-Time PCR in plasma samples is proposed

Methods used Plasma samples were obtained after blood draw conditions A. Fresh; B. Frozen after one spin, C. Frozen after 2 spins (platelet free), D. spun after overnight storage and E. spun after 72 hours of storage. Circulating miRs were detected using TaqMan OpenArray the software DataAssist 3.0 was employed to export the raw cycling threshold (CT) values and data analysed with R R/Bioconductor package LIMMA. Comparisons with moderated t-test and P-values will be adjusted for multiple testing via the Benjamin-Hochberg method. Fold changes for each miRNA were calculated using 2- delta-delta (DD) Ct where the cycle threshold DD Ct is the difference between D Ct (cancer) minus D Ct (control). Pearson correlation coefficient, using probes that are pairwise complete expressed. An adjusted $p \leq 0.05$ for miRNA expression of at least 2-fold different and expression present in >75% of samples

Summary of results Of 269 miRs detected in A (ideal collection/processing) 20 microRNAs were found in all processing conditions area under the curve, 0.97; sensitivity, 0.92; and specificity, 0.91; Platelet free frozen and over weekend condition had the lowest Pearson product-moment correlation coefficient, showing low measure of the strength and direction of association that exists between two continuous variables (fresh versus processed)

Conclusions A large number of microRNAs are detected outside cells in blood and other body fluids and reported to be very stable under harsh conditions and able to survive high temperatures, extreme pH, and RNase activity. The pool composition of the microRNAs is different in plasma vs. serum vs. whole blood due to various collection/processing methods. Our study shows the need to achieve harmonisation between collection/processing methods in order to better understand results of published and future studies.

18 NAVIGATION NEEDS OF INNER CITY BLACK PATIENT POPULATION UNDERGOING CHEMOTHERAPY FOR CANCER

Devon Mckenzie, Sawsan Amireh, Uri Goldberg, Iuliana Shapira*. *Medicine, SUNY Downstate, Brooklyn, New York, USA*

10.1136/jim-2018-000730.18

Purpose of study To assess the navigation needs of predominantly black cancer patients receiving outpatient chemotherapy at an inner-city hospital. Racial and ethnic minority patients with cancer suffer greater illness burden, disparities in all aspects of care, and higher mortality. Based on community needs assessment and to improve patients access to care SUNY Downstate designed a specific navigation protocol.

Methods used This prospective cohort study was conducted as part of a quality improvement of navigation process at SUNY Downstate University Hospital. The Institutional Review Board approved the study and provided a waiver of informed consent for participation. However, patients were free to refuse participation, and refusal was recorded. No monetary incentive was provided for participation. Patients were eligible if they were actively receiving chemotherapy at the hospitals outpatient infusion centre for a diagnosis of cancer, at least 18 years old, and English speaking. Study questionnaires were distributed by certified infusion nurses to all eligible patients presenting for chemotherapy at the infusion centre. Patients were allowed to complete questionnaires at their own pace before, during, or after chemotherapy; so long as the questionnaires were returned the same day.

Summary of results The Autonomy Preference Index mean scores were 49.62.6 for decisional autonomy and 88.12.75 for informational autonomy. There was a statistically significant difference between decisional autonomy and informational autonomy subscales (p value 7.24 1017). Brief RCOPE mean scores were 15.80.94 for positive religious coping and 3.70.87 for negative religious coping (p value 3.07 1015). For Modified Medical Outcomes Social Support Survey: Overall mean scores were 55.05.18 for instrumental social support and 63.14.35 for emotional social support.

Conclusions Our study sets the framework for further research into the faith-based contexts of understanding, social support need, and preferences for decision making in order to establish services capable of surmounting disparities in cancer care.

Our data indicate this patient population utilises religion to cope with their illness, experiences unmet instrumental social support needs, and favours receipt of medical information, while not necessarily seeking similar decisional autonomy.

19 IMPROVED ACCESS TO PAEDIATRIC SPECIALTY CARE WITH TELEMEDICINE

[1]Rachel Hatcliffe, [1]Matthew J Ledda*, [3]Briana Kyne, [1,2]Craig Sable, [1]Audra Fain, [1]Gia Badolato, [1,2]Shireen Atabaki. *[1]Children's National Medical Centre, Washington, District of Columbia, USA; [2]The George Washington University School of Medicine, Washington, District of Columbia, USA; [3]The University of Maryland School of Medicine, Baltimore, Maryland, USA*

10.1136/jim-2018-000730.19

Purpose of study

Background Lack of access to paediatric subspecialty care is a barrier to paediatric health. On average patients wait 44.9

days for an in person visit. In 2016, we established a sub-specialty direct to consumer (DTC) telemedicine program for underserved paediatric patients in a paediatric health system, providing subspecialty virtual visits, free of charge.

Objective The goal of this study was to describe the impact of a DTC telemedicine program, track metrics for consultations with patients and assess providers perceptions of the program.

Methods used This was a mixed methods study utilising, the telemedicine platform, web based surveys, and focus groups. Descriptive statistics were used to summarise visit metrics, and survey responses. Transcripts from the focus group were reviewed for thematic content.

Summary of results Between April 2016 and September 2017, our program completed 226 DTC telemedicine subspecialty follow-up appointments. The average wait time for virtual visits across all specialties was 1.87 min, compared to the average wait time of 78.2 min across specialties for an in-person follow-up during the same time period. On average DTC telemedicine saved 4542 miles travelled over 96 consults (58 miles/consult saved). 82 providers responded to surveys. Responders included 48 subspecialty providers (response rate of 93.7%) and 34 emergency providers (response rate of 45%). Provider surveys identified several beneficial outcomes of implementation of a DTC telemedicine program. Most providers (n=49, 59.7%) believed that DTC telemedicine would decrease the number of avoidable ER visits. The majority of providers (n=66, 80.5%) believed that DTC telemedicine would provide a safe medium for managing certain sub specialty conditions and believed that it would provide a cost effective alternative to in-person appointments for certain conditions.

Conclusions Our preliminary data has demonstrated a positive provider perception of DTC telemedicine. DTC telemedicine programs provide an opportunity for payers, hospitals and patients to address the needs of underserved paediatric patients for subspecialty care.

20 THE EFFECT OF B-HYDROXYBUTYRATE ON HUMAN MICROGLIA: IMPLICATIONS FOR THE KETOGENIC DIET IN NEURODEGENERATIVE DISORDERS

Lora J Kasselman*, Christine Chevalier, Juan Zhen, David Grossfeld, Aaron Pinkhasov, Irving Gomolin, Allison B Reiss. *Biomedical Research, NYU Winthrop Hospital, Mineola, New York, USA*

10.1136/jim-2018-000730.20

Purpose of study Ketogenic diets have become an alternative treatment for childhood epilepsy, cancer, Alzheimer's and other neurogenic diseases. Little or no carbohydrate intake with adequate protein and high fat content is thought to starve the body of glucose and force it to use fatty acids and their metabolites, ketone bodies such as β-hydroxybutyrate (BHB), as the main energy source. This study tests the hypothesis that BHB promotes a pro-resolving M2 microglial phenotype over an M1 inflammatory phenotype, which would be neuroprotective.

Methods used Microglia, resident macrophages of the brain, (HMC3) *in vitro*, were grown in lower glucose medium (10 mM glucose EMEM) and normal glucose medium (25 mM glucose DMEM) before being treated with 0.0 mM, 0.5 mM, 2.5 mM and 5.0 mM BHB concentrations to simulate a ketogenic diet. Trypan blue viability tests and QRT-PCR were run. QRT-PCR was analysed using the $2^{\Delta\Delta Ct}$ method for the M1 gene iNOS and the M2 gene arginase1 with GAPDH as the housekeeping gene.

Summary of results BHB did not impact cell viability at any concentration. There was a significant increase in iNOS expression in the 5.0 mM BHB treatment group compared to the 0.5 mM BHB treatment group (p=0.0240). There was no significant difference in expression of Arginase1 between groups.

Conclusions Unexpectedly, unstimulated microglia respond to higher concentrations of BHB by polarising to the M1 state. The M1 pro-inflammatory state is typically associated with disease but it is possible that microglia, in response to BHB, polarise to the M1 state in order to initiate pro-recovery changes in the neuronal environment. This foundational work will help lead to an understanding of the relationship between a ketogenic diet and the role of inflammatory microglia in neurologic diseases.

21 DIRECT ACTING ANTIVIRALS IN HCV MONO-INFECTION COMPARED TO HCV/HIV CO-INFECTION IN COMMUNITY CARE SETTING

Vijay Gayam*, Mazin Khalid, Pavani Garlapati, Arshpal Gill, Muhammad Rajib Hossain, Osama Mukhtar. *Medicine, Interfaith Medical Centre, Brooklyn, New York, USA*

10.1136/jim-2018-000730.21

Purpose of study In this study, we evaluated the efficacy, safety, and tolerability of different regimens of DAA in both HCV monoinfected and HCV/HIV co-infected patients as there are few published studies in the real-world community settings.

Methods used All the HCV mono-infected and HCV/HIV co-infected patients treated with DAAs between January 2014 and October 2017 in community clinic settings were retrospectively analysed. Pretreatment baseline patient characteristics, treatment efficacy with SVR 12, and adverse reactions were compared between the groups.

Summary of results 327 patients were included in the study, of which 253 (77%) were HCV mono-infected, and 74 (23%) were HCV/HIV co-infected. Overall SVR 12 was achieved in 94% among all the patients who received DAA agents. However, there was a statistically significant difference observed in SVR12 when comparing HCV mono-infection and HCV/HIV co-infection (94% and 84% respectively, p=0.003).

Univariate analysis of factors associated with SVR showed HCV/HIV co-infected patients who failed to achieve SVR12 as compared to those who did achieved SVR 12 had higher mean HIV viral load (90.78 IU/ml vs 62.84 IU/ml, p=0.01), higher mean HCV viral load (4512134 IU/ml vs 3434891 IU/ml, p<0.05) and lower mean CD4 count (458 cells/ml vs 610 cells/ml, p<0.05) which were rare findings not identified in any of existing trials. However, SVR in the co-infected population was not affected by age, race, BMI, HCV genotype, HCV prior treatment status, MELD score, cirrhosis status, baseline AST, ALT, haemoglobin, and platelet level.

The most common adverse effect is fatigue (27%). No significant drug interaction observed between DAA and anti-retroviral therapy (ART).

Conclusions In the community care setting, DAA regimens are highly effective therapy in patients with HCV mono-infection with an overall SVR rate of 94%. However, the response is diminished in patients with HCV/HIV co-infection, with a lower overall SVR rate of 86%, contrary to the overall higher

response observed in clinical trials. DAAs appear to be safe without significant drug reactions with ART as observed in our study. Further real-world clinical efficacy studies are required to assess the lower SVR as seen in HCV/HIV co-infected patients.

22 FAMILIAL LEUKAEMIA: EXAMINATION OF 84 PEDIGREES

[1,2]Matthew P Blakley*, [1]Janice Dutcher, [1]Peter H Wiernik. *[1]Cancer Research Foundation, Chappaqua, New York, USA; [2]College of Human Ecology, Cornell University, Ithaca, New York, USA*

10.1136/jim-2018-000730.22

Purpose of study To determine if evidence for a genetic basis for familial leukaemia can be obtained from a study of family pedigrees.

Methods used From a registry of over 750 randomly acquired pedigrees of families with multiple hematologic malignancies (HM) we identified 84 families with multiple cases of leukaemia. In 19 families, all affected individuals had acute myeloid leukaemia (AML) (Group 1), 9 families had individuals only affected with acute lymphocytic leukaemia (ALL) (Group 2), 6 families had individuals with both AML and ALL (Group 3), 12 families had individuals with acute leukaemia and other hematologic malignancies (Group 4), and 38 families had cases of leukaemia not otherwise specified and other hematologic malignancies (Group 5).

Summary of results Multigenerational HM allowed for evaluation of anticipation, which was evident in affected pairs in 11 of 11, 3 of 4, 2 of 3, 13 of 14 and 23 of 28 in groups 1, 2, 3, 4, and 5 respectively. Median anticipation for all 54 pairs in the 5 groups was −30 years. Siblings were diagnosed with the same leukaemia in 10 of 19, 4 of 9, 3 of 6, and 1 of 12 families in groups 1, 2, 3, and 4, respectively. When siblings gender was known, affected siblings were of the same sex in 3 of 4 pairs in group 1, 3 of 4 pairs in Group 2, 2 of 3 pairs in Group 3, and 2 of 2 pairs in Group 4. Parent-child pairs diagnosed with leukaemia were present 6, 1, 2, 6, and 28 times in groups 1, 2, 3, 4, and 5, respectively. Parent-child pairs had the same leukaemia in 6 of 6, 1 of 1, 0 of 2, and 0 of 9 instances in groups 1, 2, 3, and 4, respectively. Parent-child pairs were the same sex in 4 of 6, 1 of 1, 2 of 2, 5 of 9 and 38 of 65 affected pairs in groups 1, 2, 3, 4, and 5 respectively.

Conclusions Anticipation is strong evidence for a genetic basis of disease in these families (Wiernik PH *et al. Br J Haematol* 2001;1113:407 and Dutcher JP *et al. Fam Cancer* 2016;15:677 and same sex involvement of siblings and multigenerational affected pairs suggests involvement of a site on a sex chromosomes (Horwitz and Wiernik PH. *Am J Hum Genet* 1999;65:1413).

*23 IS COGNITIVE REST FOLLOWING A HEAD INJURY ASSOCIATED WITH PROLONGED CONCUSSION SYMPTOMS?

Jeremy M Root*, Jamil Madati, Matt Ledda, Kristen Breslin, Shireen Atabaki. *Emergency Medicine, Childern's National Medical Centre, Washington, District of Columbia, USA*

10.1136/jim-2018-000730.23

Purpose of study

Background Recent studies have suggested that cognitive rest may not lead toward a faster recovery from acute concussions. Furthermore, the latest international consensus concussion guidelines note the appropriate amount of cognitive rest remains undetermined.

Objective Our objective was to determine the relationship between cognitive rest and prolonged concussion symptoms.

Methods used

Methods A prospective cohort study of 518 year olds diagnosed with an acute concussion in a tertiary care childrens hospital emergency department was conducted from January to December 2017. Participants completed the post-concussion symptom inventory (PCSI) at diagnosis. Emergency provider recommendations on rest from school were collected. Follow-up calls were completed at 1 week to determine time off from school as a proxy of cognitive rest. Rest was assessed in tertiles; PCSI scores were re-assessed at 4 weeks.

Summary of results

Results 85 patients have been enrolled with a median age of 11.0 (IQR: 913.5), 58% male. 73 subjects completed 7 day follow-up. 24.7% (n=18) of patients took no time off from school; 42.5% (n=31) took 12 days off; and 32.9% (n=24) took 3 or more days off from school. 24% had prolonged concussion symptoms. In our logistic regression analysis, when compared to the shortest rest tertile, the longest rest tertile had a 1.25 fold increase in prolonged concussion symptoms, which was not statistically significant (95% CI: 0.24 to 6.65).

Conclusion In our preliminary pilot data, patients who took more time off from school did not show decreased likelihood of prolonged concussion symptoms. Further studies are necessary to determine if select patient populations are at particular risk of rest associated with prolonged concussion symptoms.

*24 MICROGLIA IN A HYPERGLYCEMIC ENVIRONMENT PROMOTE ALZHEIMER'S DISEASE-LIKE PATHOLOGY THROUGH CHOLINGERGIC SYNAPTIC DYSFUNCTION AND INCREASED AMYLOID B PRODUCTION

[1]Hirra A Arain*, [1]Heather A Renna, [1]Lora J Kasselman, [2]Aaron Pinkhasov, [3]Irving Gomolin, [1]Alan M Jacobson, [2]Joshua DeLeon, [5]Melissa Fazzari, [1,4]Allison B Reiss. *[1]Biomedical Research, NYU Winthrop Hospital, Mineola, New York, USA; [4]Department of Medicine, NYU Winthrop Hospital, Mineola, New York, USA; [2]Psychiatry, NYU Winthrop Hospital, Mineola, New York, USA; [3]Geriatrics, NYU Winthrop Hospital, Mineola, New York, USA; [5]Biostatistics, NYU Winthrop Hospital, Mineola, New York, USA*

10.1136/jim-2018-000730.24

Purpose of study Alzheimer's disease (AD) is a neurodegenerative disorder characterised by progressive cognitive decline. Epidemiological studies have revealed a clear association between type 2 diabetes mellitus (T2DM) and increased risk of developing AD later in life, though it is unclear how T2DM promotes such pathology. Genome wide assocation analyses implicate microglia, the resident macrophages in the brain, as players in AD pathology, inciting this investigation into how T2DM conditions promote AD pathogenic processes in neurons through immunomodulation of microglia.

Methods used Human microglia (HMC3) and differentiated human neuroblastoma (SH-SY5Y) cells were grown for 24 hours as follows: low glucose (5 mM), high glucose (50 mM), high insulin (50U), and low or high glucose +high insulin. Microglial conditioned medium (MCM) from each treatment was added to SH-SY5Y continuing under the same treatment conditions for a further 24 hours. SH-SY5Y exposed directly to each condition were used for comparison. mRNA was isolated and qRT-PCR performed for 4

genes relevant to AD: amyloid precursor protein (APP), β-secretase (BACE1), α-secretase (ADAM10), and acetylcholinesterase (AchE).
Summary of results Compared to SH-SY5Y exposed to T2DM conditions alone, SH-SY5Y exposed to MCM from all T2DM treatment groups upregulated expression of APP ($p<0.0001$). Further, a significant increase in AchE was detected in SH-SY5Y exposed to MCM originating from the hyperglycemic condition ($p=0.005$). No significant difference was observed in expression of BACE1 or ADAM10 across any treatment group.
Conclusions MCM increases expression of genes related to AD pathophysiology through increased amyloid production and cholinergic synaptic dysfunction. Further, glucose exposure of microglia influences how microglia affect neurons. This has clinical implications because AD pathogenesis has been linked to deficiency in the neurotransmitter acetylcholine and current symptomatic treatment of AD employs AchE inhibitors.

MODERATED POSTER LUNCH COMPETITION 11:30 AM – 12:45 PM

MP1 PULMONARY AND ABDOMINAL TUBERCULOSIS

Theo D Trandafirescu*. *Medicine, Mount Sinai Services, Queens Hospital Centre, Flushing, New York, USA*

10.1136/jim-2018-000730.25

Purpose of study Pulmonary tuberculosis is prevalent in endemic populations throughout the globe. Patients usually present with typical pulmonary symptoms. Extrapulmonary tuberculosis symptoms are often non-specific and come with a wide range of differentials. We present a case of anaemia caused by malabsorption with intestinal involvement of tuberculosis.
Methods used A 47 year old female with no previous medical history, presented with symptomatic anaemia with exertional shortness of breath. Other symptoms include abdominal bloating, weight loss, 3 days of cough with yellow sputum, subjective fevers and night sweats. She moved from Philippines 5 years ago.Patient was found to have severe microcytic anaemia and remained febrile despite broad spectrum antibiotics. Quantiferon was positive.CT chest with contrast revealed bilateral nodular infiltrates, centrilobular, with tree on bud appearance and left sided pleural effusion. Abdomen CT revealed wall thickening of the terminal ileum, right colon and transverse colon, enlarged mesenteric lymph nodes, mild ascites with omental thickening and infiltration with numerous peritoneal implants.CA-125 was elevated at 706 U/mL. CRP was elevated at 61.1 mg/L. ESR was elevated at 44 mm/hr. EGD revealed gastritis, duodenitis and hiatal hernia. Colonoscopy revealed extensive ulcers with nodularity and surrounding erythema in the cecum, ascending colon, proximal and mid transverse colon. Biopsies from the colonoscopy revealed necrotizing and non-necrotizing granulomata and acid fast bacilli consistent with intestinal tuberculosis. The patient was started on RIPE therapy with resolution of fevers.
Summary of results Abdominal tuberculosis can mimic peritoneal carcinomatosis, with elevated CA-125 levels, ascites, and pelvic lymphadenopathy.Serum CA-125 levels are elevated in peritoneal tuberculosis, which should be considered in patients with suspicion of peritonitis carcinomatosa. Furthermore, serum CA-125 can be used to monitor the response of disease to anti-tubercular treatment.
Conclusions Abdominal tuberculosis should remain as a differential in high risk patients who present with clinical symptoms and image findings suspicious for peritoneal carcinomatosis. Given the correlation of peritoneal tuberculosis and elevated CA-125 levels, prompt diagnosis may prevent unnecessary laparotomies.

MP2 LIPOPROTEIN CHOLESTEROL CHANGES ACROSS INCREASING STAGES OF TYPE 2 DIABETES MELLITUS

[1]Bin Gui, [2]Evan Siau, [1]Louis F Amorosa*. [1]*Medicine, Rutgers Robert Wood Johnson Medical School, New Brunswick, New Jersey, USA*; [2]*Medicine, St. Barnabas Hospital, New York City, New York, USA*

10.1136/jim-2018-000730.26

Purpose of study Prediabetes (PD) is frequently found to be statistically more prevalent in patients with coronary artery disease (CAD). This cross-sectional study of a well-defined and select cohort of PD subjects aimed to uncover a link between lipid profiles and hepatic fat metabolism across the spectrum of glucose intolerance which could be implicated in the pathogenesis of premature CAD in PD.
Methods used Subjects from combined NHANES 20052012 without history of DM, dyslipidemia or medication for these disorders were matched by age and gender and categorised into normal group (HbA1c<5.7 and fasting plasma glucose <100 mg/dl), PD group (6.5>HbA1 c≥5.7 or 125 mg/dl>fasting plasma glucose ≥100 mg/dl) and DM group (HbA1c≥6.5 or fasting plasma glucose ≥125 mg/dl). Body mass measures, plasma insulin level, lipid panel and hepatic steatosis were compared among 3 groups, using Chi-square and Wilcoxon rank sum test.
Summary of results From 29 314 subjects in NHANES: 128 normal, 132 PD and 130 DM subjects were selected. BMI, waist circumference increased within groups (all $p<0.001$) in parallel with hepatosteatosis and triglyceride production, and consistent with increasing lipogenesis. LDL changes were distinctive being highest in PD group. The increase in the Non-HDL-Cholesterol fraction including other atherogenic particles is apparent in PD.
Conclusions Insulin values, progressive dyslipidemia and hepatic steatosis correlated with advancing type 2 diabetic stages as expected, but the disparity in the LDL response and the relatively acute and persistent increase in Non-HDL Cholesterol values indicates an imbalance between measures of lipogenesis and lipoprotein clearance in PD; and a mechanism for early onset of diabetic induced atherogenesis.

Abstract MP2 Table 1

Median and interquartile range or percentage	Normal (1)	PD (2)	DM (3)	P among groups	P (1) vs (2)	P (2) vs (3)
Age	63.5 (52.574.0)	64.5 (53.076.0)	62.5 (53.072.0)	0.74	0.71	0.44
Gender (male %)	53.1%	54.6%	60.8%	0.42	0.82	0.31
Weight (kg)	71.1 (62.378.5)	78.2 (65.988.0)	84.4 (75.498.9)	<0.0001	0.0005	<0.0001
Total cholesterol (mg/dl)	204 (181226)	213 (194249)	208 (182245)	0.01	0.002	0.11
LDL	**124 (99141)**	**146 (119167)**	**126 (100–151)**	**0.0003**	**<0.0001**	**0.007**
Triglyceride	104 (82–139)	117 (83175)	179 (131243)	<0.0001	0.13	<0.0001
HDL	55 (4269)	49 (4360)	40 (3448)	<0.0001	0.16	<0.0001
Non-HDL-Cholesterol	147 (126170)	167 (140198)	167 (135196)	<0.0001	0.0002	0.96
Insulin (uU/ml)	7.24 (5.7710.55)	9.12 (7.2812.59)	15.22 (11.2122.88)	<0.0001	0.0002	<0.0001
Hepatic steatosis	24.2%	45.7%	78.7%	<0.0001	0.002	<0.0001

MP3 BURDEN OF GENE MUTATIONS IN CARIBBEAN WOMEN WITH BREAST CANCER

[1]Edwin Chiu*, [1]Bachar Samra, [2]Gordon Moffat, [2]Eduardo Hernandez, [1]Iuliana Shapira. *[1]Department Haematology/Oncology, SUNY Downstate Medical Centre, Brooklyn, New York, USA; [2]Department Internal Medicine, SUNY Downstate Medical Centre, Brooklyn, New York, USA*

10.1136/jim-2018-000730.27

Purpose of study Identifying mutations in breast cancer genes (BRCA1, BRCA2, PABL2) has important clinical implications on a woman's lifetime susceptibility to breast cancer development. Nearly 10% of immigrants to the United States come from the Caribbean and few studies exist that examine breast cancer gene mutations in African-Caribbean women with existing breast cancer. The purpose is to review breast cancer epidemiology statistics and prevalence of breast cancer genetic mutations in this cohort.

Methods used Epidemiologic data on select Caribbean countries and USA was abstracted from GLOBOCAN 2012, a database of estimated global cancer statistics produced by the International Agency for Research on Cancer and World Health Organisation. A Literature Search was also conducted through PubMed database using following terms: Caribbean, (familial breast cancer), (hereditary breast cancer), and (BRCA breast cancer) that was subsequently narrowed to epidemiologic relevance resulting in five citations.

Summary of results Although Breast Cancer cumulative incidence risk of Caribbean women (59%) appear to be less than that of the US women (10%), the cumulative mortality risk in the Caribbean cohort (up to 2.7%) appears greater than that of the US (1.6%). Through a PUBMED literature search, we have also identified five Cross Sectional Cohort Studies on Breast Cancer patients of Caribbean women who have undergone genetic mutation testing for BRCA1, BRCA2, and PALB2 with 27% cases in Bahamas (n=214 women); 2.8% cases in Jamaica (n=179 women); 10.4% cases in Trinidad/Tobago (n=268 women); none in Barbados (n=118 women); 2.6% in Cuba (n=307 women). No study accounted for ascertainment bias.

Conclusions This study summarises the estimate of breast cancer incidence and mortality in Caribbean women and known prevalence of BRCA1/2 and PALB2 breast cancer gene mutations in this cohort. This is critical as part of a formal genetic risk assessment and counselling of patients with breast cancer. Further research and understanding the contributions of inherited gene mutations will guide the optimal health policy in breast cancer screening and risk management.

MP4 DUAL VERSUS SINGLE ANTI-PLATELET THERAPY AFTER TRANS CATHETER AORTIC VALVE REPLACEMENT

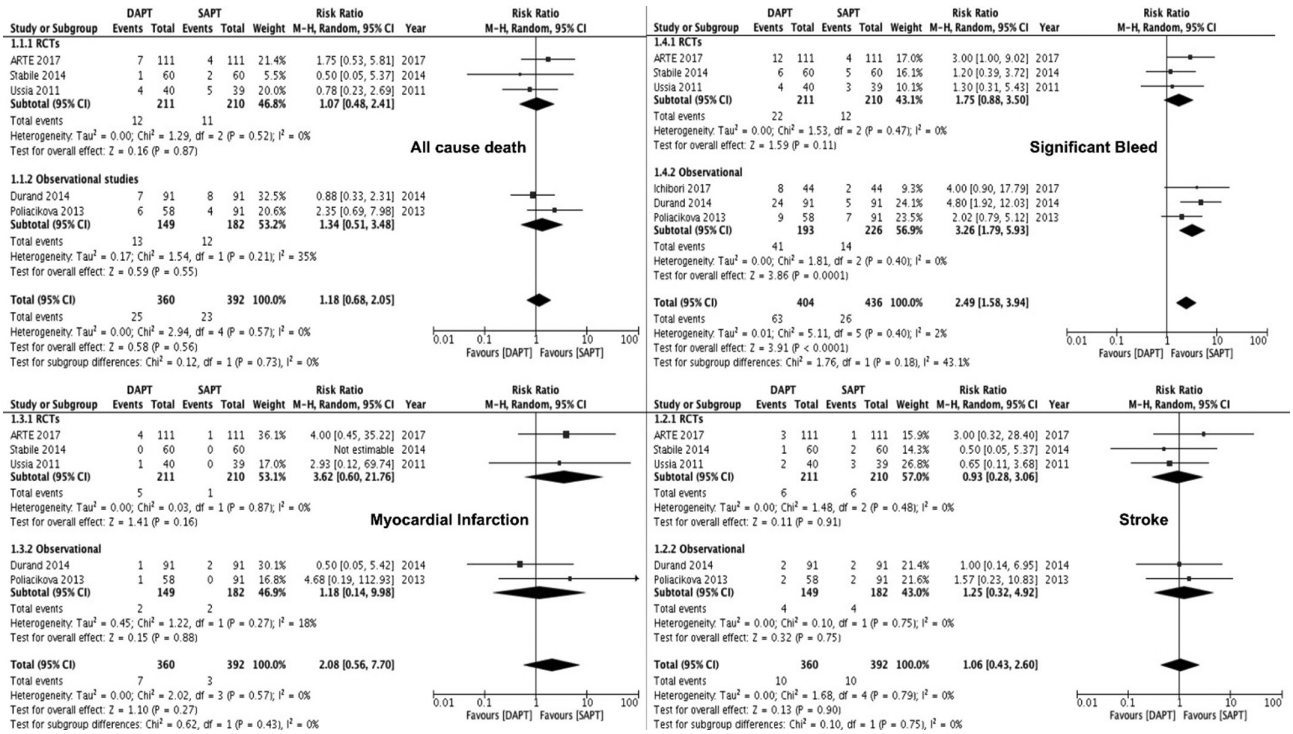
Sunny Goel*, hitesh Raheja, Jacob Shani. *Cardiology, Maimonides Medical Centre, Brooklyn, New York, USA*

10.1136/jim-2018-000730.28

Purpose of study Methods used We searched PubMed, EMBASE, the Cochrane Central Register of Controlled trials, and the clinical trial registry maintained at clinicaltrials.gov for randomised control trials (RCT) and observational studies comparing DAPT with SAPT post TAVR. Event rates were compared using a Forest plot of relative risk using a random-effects model assuming interstudy heterogeneity.

Summary of results A total of 6 studies (3 RCTs and 3 observational studies, n=840) were included in the final analysis. Compared to SAPT, DAPT was associated with increased risk of significant bleeding (life threatening and major) [RR=2.49 (95% CI: 1.58 to 3.94, Z=3.91, p<0.0001)] with the number needed to harm for major or life threatening bleeding calculated to be 10.4. There was no significant difference in the incidence of stroke [RR=1.06 (95% CI: 0.43 to 2.60, Z=0.13, p=0.90)], spontaneous myocardial infarction [RR=2.08 (95% CI: 0.56 to 7.70, Z=1.10, p=0.27)] and All-cause mortality [RR=1.18 (95% CI: 0.68 to 2.05, Z=0.58, p=0.56] in the DAPT and SAPT groups. [Figure showing the analysis results.]

Conclusions In our meta-analysis, use of DAPT after TAVR was associated with the increased risk of major and life threatening bleed as compared to SAPT. No difference in stroke, myocardial infarction and All-cause mortality was noted between two groups. Post TAVR treatment with aspirin alone might be an acceptable strategy.



Abstract MP4 Figure 1

MP5 ACUTE PHASE KETOSIS-PRONE ATYPICAL DIABETES IS ASSOCIATED WITH A PRO-INFLAMMATORY PROFILE: A CASE-CONTROL STUDY IN A SUB-SAHARAN AFRICAN POPULATION

[1]Eric Lontchi-Yimagou*, [2]Philippe Boudou, [2]Jean Louis Nguewa, [3]Jean Claude Mbanya, [2]Jean-Francois Gautier, [3]Eugene Sobngwi. *[1]Medicine, Diabetes Research and Training Centre, Albert Einstein College of Medicine, Bronx, New York, Bronx, New York, USA; [2]INSERM, UMRS 1138, Centre de Recherche des Cordeliers, Paris, France; [3]National Obesity Centre, Yaound Central Hospital, Yaound, Cameroon*

10.1136/jim-2018-000730.29

Purpose of study It is unknown whether inflammation plays a role in the metabolic dysfunction in ketosis-prone diabetes (KPD). We aimed to assess the inflammatory profile in sub-Saharan African patients with KPD during the acute ketotic phase as well as during non-ketotic hyperglycemic crises.

Methods used We studied 72 patients with non-autoimmune diabetes: 23 with type 2 diabetes mellitus (T2D), and 49 with KPD, all admitted in hyperglycemic crisis (plasma glucose >250 mg/dl). The T2D and KPD groups were matched by sex, age, and Body Mass Index. KPD was sub-classified into new-onset ketotic phase (n=34) or non-ketotic phase (n=15). We measured TNF-α, MCP-1, MIP1-α, IL-8, MIP1-β, and VEGF in the serum of all participants during the acute hyperglycemic crisis.

Summary of results TNF-α and IL-8 were higher in participants with KPD compared to those with T2D (p=0.02 TNF-α; p=0.03 IL-8). TNF-α and IL-8 were also higher in the ketotic phase KPD group compared to the T2D group (p=0.03 TNF-α; p<0.001 IL-8) while MIP1-α was lower in people with ketotic phase KPD compared to their T2D counterparts (p=0.03). MIP1-α was lower in the ketotic phase KPD group compared to the non-ketotic phase KPD group (p=0.04). MCP-1 was lower in non-ketotic phase KPD compared to T2D (p=0.04), and IL-8 was higher in non-ketotic phase KPD compared to T2D (p=0.02).

Conclusions Participants with KPD had elevated pro-inflammatory cytokines compared to their T2D counterparts. Ketotic phase KPD is associated with a different pro-inflammatory profile compared to non-ketotic phase KPD, and the inflammatory profile appears to be comparable between people in non-ketotic phase KPD and T2D. Whether this inflammatory profile will directly impact the natural history of β-cell function and distinguish insulin-dependent KPD from KPD with remission period needs further investigation.

MP6 TAKOTSUBO CARDIOMYOPATHY: A SYSTEMATIC REVIEW OF THE LITERATURE

[1]Nicole Pristera*, [2]Zainab Samad. *[1]Internal Medicine, Duke University Hospital, Durham, North Carolina, USA; [2]Cardiology, Duke University Hospital, Durham , North Carolina, USA*

10.1136/jim-2018-000730.30

Purpose of study Stress cardiomyopathy/Takotsubo syndrome remains poorly understood. Our objective was to conduct a systematic review of this condition, focusing on pathophysiology, treatment, and outcomes.

Methods used A search was conducted of Pubmed and Google Scholar for articles from 1990 to 2017 describing Takotsubo syndrome. Literature with paediatric patients was excluded, as were individual case reports.

Summary of results Of 212 reports, 32 met criteria for inclusion: 13 retrospective studies, 8 prospective studies, 9 systematic literature reviews, and 2 case series. No randomised controlled trials were identified. 6775 patients were included in the review, with 86.8% women (n=5880) and an average age of 67.1 years. Takotsubo was associated with biomarker elevation in 90.4% of patients and normal coronary arteries

on catheterization in 93.7%. Emotional triggers were identified in 36.5% of patients, while physical stressors were present in 40.7%. In 22.8% of cases, no provoking factor was found. Acute complications include cardiogenic shock (11.2%), apical thrombus formation (2.95%), and ventricular arrhythmias (6.56%). In-hospital mortality is estimated at 4.67%. Gradual recovery of left ventricular function is expected, yet long-term complications including myocardial infarction are observed. Although Takotsubo is more common in women, mortality is higher in males; in one study, the five-year risk for all-cause mortality was 2.6 times higher for males than females. The proposed pathophysiology was fairly uniform across the literature, with catecholamine excess cited by 17 studies. However, whether the exaggerated sympathetic stimulation is a cause or consequence of the syndrome is controversial. Beta blockers are commonly prescribed, but two meta-analyses failed to identify a survival benefit. Inhibitors of the renin-angiotensin-aldosterone system have shown improved survival. Duration of treatment was not uniformly defined in any identified studies.
Conclusions Originally viewed as a benign process, Takotsubo is now recognised as a disease associated with potentially serious and even fatal consequences. Further research should explore why Takotsubo affects men and women differently. Additional studies are needed to delineate treatment regimens to improve outcomes for this complex clinical entity.

MP7 BARRIERS TO HEPATITIS C TREATMENT- INTERNAL MEDICINE RESIDENTS PERSPECTIVES IN A COMMUNITY CARE SETTING

[1]Mazin O Khalid*, [1]Sumit Dahal, [1]Vijay Gayam, [1]Amrendra Mandal, [2]Mowyad Khalid, [1]Muhammad Rajib Hossain, [1]Osama Mukhtar. *[1]Medicine, Interfaith Medical Centre, Brooklyn, New York, USA; [2]Medicine, Wayne state university, Detroit, Michigan, USA*

10.1136/jim-2018-000730.31

Purpose of study Only a small proportion of patients with Chronic Hepatitis C (CHC) are linked to care and receive treatment. Internal medicine (IM) residents spend nearly one third of their training in primary care setting and are at the forefront of care for these patients. Understanding IM residents knowledge, attitude, practice and perceptions of challenges regarding CHC will improve patient outcomes.
Methods used IM residents in a community hospital voluntarily completed an anonymous questionnaire about their knowledge, attitude and practice regarding CHC treatment and its challenges. A descriptive analysis was done and the results are presented as percentages.
Summary of results A total of 83 residents participated in the survey. One-third of the residents (n=28) felt the patients were not aware that CHC was curable, while 62.65% (n=52) felt the patients did not know about newer treatment options. Nearly three-fourth of them (n=60) felt the patients did not know the fate of untreated CHC. As for the challenges in CHC and its treatment, more than a third of the residents (n=33) perceived the patients to be interested only in discussing the main issue that brought them to the physicians. Patients not seeing the need for treatment, their feeling of being offended by CHC discussion, perceived difficulty in prior authorisation, and lack of insurance were some of the other perceived challenges. As for the mitigating measures, almost 9 out of 10 residents (n=73 and n=76 respectively) felt proper education about new treatment modalities and their side effects compared to previous treatment options with emphasis on the shorter duration of treatment and the excellent outcomes could increase the patients willingness to treatment. Nearly 83% of residents (n=69) felt involving support groups with patients who had successfully completed hepatitis C treatment would increase patients willingness and compliance with treatment.
Conclusions Understanding IM residents knowledge, attitude, practice and perceptions of challenges regarding CHC and its treatment will go a long way in understanding and mitigating the challenges facing CHC treatment, and ultimately reduce morbidity, mortality and the associated financial burden of the disease.

MP8 HEALTHCARE DISPARITIES IN GENETIC TESTING FOR HEREDITARY CANCERS IN THE AFRICAN AMERICAN POPULATION

Bachar Samra*, Edwin Chiu, Iuliana Shapira. *Haematology/Oncology, SUNY Downstate Medical Centre, Brooklyn, New York, USA*

10.1136/jim-2018-000730.32

Purpose of study Identifying inherited gene mutations can reduce cancer incidence and mortality. Since the introduction of genetic testing more than 10 years ago, knowledge about genetic counselling and testing (GCT) remains limited among racial minorities. Minority populations (including African Americans (AA)) are expected to account for more than half of the overall American population by 2050. There is a growing body of evidence that AA patients are at least as likely as their white counterparts of having hereditary cancers. However, despite their high interest level, AA patients are substantially underrepresented in GCT studies and are less likely than whites to be offered GCT services. We aim to synthetize literature on GCT for inherited cancers in AA and the barriers associated with its underutilization.
Methods used An exhaustive literature search was performed using PubMed and abstracts published from meetings of the American Association for Cancer Research, the American Society of Human Genetics, and the American Society of Clinical Oncology. Our search utilised the following terms: genetic screening; disparities; African American; Black; hereditary cancer; BRCA; HNPCC; and barriers.
Summary of results African Americans are marginalised in GCT studies. Additionally, AA patients are significantly less likely than white patients, to be offered GCT services. The International Society for Gastrointestinal Hereditary Tumours (InSight) database and the Myriad Genetic Laboratories BRCA1/2 Testing Database from 2002 included <5% and<4% AA patients, respectively.
Conclusions Healthcare disparities in GCT for hereditary cancers continue to be an unmet area of research. Addressing such challenges must be a national priority in order to provide equal care with outreach to racially/ethnically, socioeconomically, and geographically diverse populations. Efforts are needed to identify best practices to improve GCT services in these populations with the ultimate goal of improving cancer prevention, detection and mortality.

MP9 INTRINSIC INFLAMMATORY AND INNATE IMMUNE GENE PROFILING IN PAEDIATRIC ASTHMATIC AIRWAY EPITHELIUM

Samira Naime*, James Jackson, Geovanny Perez, Gustavo Nino, Dinesh Pillai. *Children's National Medical Centre, Washington, District of Columbia, USA*

10.1136/jim-2018-000730.33

Purpose of study There is increasing evidence that the airway epithelium shapes immune responses against pathogens in asthma and thus plays a key role in the pathogenesis of the disease. Studies in adult asthmatics have defined baseline differences in airway epithelial cell (AEC) innate immune responses, increasing their susceptibility to inflammation, remodelling and viral-induced exacerbations. However, this is poorly defined in children.

Methods used GEO gene expression datasets of AEC obtained from paediatric asthmatic subjects via nasal brushing were analysed. Gene expression was assessed on Agilent Human Gene Expression arrays. All datasets underwent normalisation with R package. For this analysis, we used a subset of curated 137 genes (from a total of 20 532 genes) involved in airway inflammation and innate immunity. T-test was done for the mean expression of gene between the 2 groups (asthma vs. normal). P values<0.01 were considered significant.

Summary of results A total of 69 children aged 10 to 12 years with both atopy and persistent asthma (n=36) or healthy control subjects (n=33) were included in this dataset. Of 137 genes analysed, 28 were differentially expressed in subjects with asthma compared to normal. Genes related to airway inflammation and remodelling were increased in asthmatic epithelium (CTNND1, DEFB1, TIMP1 and ALOX15; p<0.01) as well as known genetic biomarkers in asthma (SERPINB2 and CST1, p<0.01). CASP4, TNF, CIITA and CCR6 were decreased in paediatric asthmatic AEC. Interestingly, TLR7 and CCL5 were significantly down-regulated in asthmatic samples, suggesting baseline deficits in antiviral innate immunity in this group.

Conclusions Studying airway epithelium in paediatric asthma is crucial to our understanding of the intrinsic immune response in this disease. Our data identified discrepancies in inflammatory and innate immunity pathway at baseline in patients with asthma compared to healthy individuals. Specifically, upregulation of inflammatory pathways in asthma at baseline and downregulation of specific innate immunity genes like TLR7 which may explain the abnormal response of asthmatic airway epithelium to pathogens. Future studies evaluating the role of TLR7 in paediatric asthmatic airway epithelium may provide new insight into airway-environment interactions in childhood asthma.

MP10 CHRONIC HEPATITIS C GENOTYPE 4 INFECTION TREATMENT RESPONSE IN COMMUNITY CARE SETTING

Vijay Gayam*, Mazin Khalid, Muhammad Rajib Hossain, Pavani Garlapati, Arshpal Gill, Osama Mukhtar. *Medicine, Interfaith Medical Centre, Brooklyn, New York, USA*

10.1136/jim-2018-000730.34

Purpose of study Chronic hepatitis C (HCV) genotype 4 (GT-4) represents up to 20% of HCV infections globally and 1% to 2% in the United States. GT-4 is dominant in the Middle East particularly in Egypt and North Africa. We evaluated the efficacy, safety, and tolerability of different regimens of DAA in patients with chronic hepatitis C Genotype 4 (HCV GT-4) in real-world community practice setting.

Methods used All the HCV GT-4 patients treated with DAAs between January 2014 and July 2017 in community clinic setting in a single centre were retrospectively analysed. Pretreatment baseline patient characteristics, treatment efficacy with SVR at 12 weeks posttreatment (SVR12), and adverse reactions were assessed.

Summary of results 52 patients mainly of Egyptian descent were included in the study. 32 patients were treated with Ledipasvir/Sofosbuvir (Harvoni) Ribavirin, 12 patients were treated with Ombitasvir/Paritaprevir/Ritonavir/Dasabuvir (Viekira Pak) Ribavirin, and eight patients were treated with Sofosbuvir/Velpatasvir (Epclusa).

Overall SVR 12 was achieved in 94% patients who received one of the three DAA regimens (93.8% in Harvoni group, 91.7% in Viekira Pak group and 100% in Epclusa group). Prior treatment status, type of regimen used and presence of cirrhosis had no statistically significant effect on the rate of overall SVR achievement (p=0.442 and p=0.091 respectively).

However, in subgroup analysis among patients treated with Harvoni group, there was a statistically significant difference observed in SVR12 between cirrhosis vs. non-cirrhotic status (SVR12 50% and 100% respectively, p=0.012). All three patients who failed to achieve SVR12 had compensated cirrhosis, and HCV/HIV coinfection (p=0.004). The most common adverse effect is fatigue (27%). Overall treatment was well tolerated, and no patient died or discontinued treatment due to adverse events.

Conclusions In the real-world setting, DAAs are effective and well tolerated in patients with chronic hepatitis C Genotype 4 infection with a high overall SVR rate of 94%. Response rate could be diminished in HCV/HIV co-infection group and also in cirrhotic patients treated with Ledipasvir/Sofosbuvir as observed in our study. Further large scale studies are needed to assess response in these groups.

DISPLAY POSTERS

DP1 LARGE BRONCHOGENIC CYST

Theo D Trandafirescu*. *Medicine, Mount Sinai Services, Queens Hospital Centre, Flushing, New York, USA*

10.1136/jim-2018-000730.35

Purpose of study Large solitary pulmonary cysts are a rare and often incidental finding on chest imaging.Management of cysts is primarily with surgery. Post-operative complications include recurrence of cysts, tracheomalacia and restrictive lung disease secondary to parenchymal volume loss.

Methods used AL is a 45 year old female with no significant past medical history, presenting with complaints of cough and sore throat for greater than one months duration. She denied history of smoking, alcohol or drug abuse. Sputum cultures were negative for AFB. PFT showed an FEV1 of 1.79, FVC 2.20 with a FEV1/FVC ratio of 81%, (95% predicted) without bronchodilator response. CT Chest without contrast revealed massive cyst with maximal diameter of 11.8 cm occupying the left upper lobe extending into and occupying the left lung apex. The walls of the cyst were uniform, with contents equal parts air and fluid, suggestive of a bronchogenic

cyst with mural calcification. The patient underwent a left VATS procedure and thoracotomy. Pathology showed bronchial cyst fluid.

Summary of results Bronchogenic cysts are a rare, congenital malformation arising from the abnormal budding of the ventral diverticulum of the foregut or tracheobronchial tree between the 26th and 40th days of gestation. Bronchogenic cysts are the most common primary cysts of the mediastinum and are usually unilocular.The aetiology of our presented patients bronchogenic cyst was found to be congenital.Bronchogenic cysts are often found incidentally on chest imaging. The diagnosis of bronchogenic cysts is primarily radiological, with CT scan providing 69.2% and MRI providing 100% accuracy. Management in stable patients with symptoms is with surgery, including VATS or posterolateral thoracotomy. Complications of post-operative bronchogenic cyst removal include recurrence in a small proportion of patients, tracheomalacia, and restrictive pattern on pulmonary function testing. Despite the size of the cyst in our presented patient, no post-operative changes in PFT were noted.

Conclusions Large bronchogenic cysts can often present in patients with mild symptoms and should be evaluated with pre- and post-operative pulmonary function testing and be managed with VATS in patients able to undergo surgery. Further studies on the incidence and risk of post-operative complications are necessary.

DP2 A CASE OF HEMATOLOGIC DYSFUNCTION AND IDIOPATHIC DYSTONIA IN HERMANSKY-PUDLAK SYNDROME

Gagan Raju*, Sandra Gomez. *Internal Medicine, Nassau University Medical Centre, Brooklyn, New York, USA*

10.1136/jim-2018-000730.36

Purpose of study We aim to contribute to the body of literature and enhance understanding of the pathology of hematologic derangements in Hermansky-Pudlak syndrome.

Methods used A review of the literature and case reports of Hermansky-Pudlak syndrome.

Summary of results We present the case of a patient with history of Hermansky-Pudlak syndrome and idiopathic dystonia who presented with expanding hematoma after influenza vaccine over the course of 5 days despite normal platelet count of 337. Her dystonic episodes are characterised by sudden sensation of tightness/spasm in various parts of her body (episode present upon admission began in her neck) which radiates into her lower back, sacrum and into bilateral upper extremities. She describes spasms as a pulling sensation after which her body collapses on account of the sensation of tightness and becomes folded and rates them as 10/10 in severity. Her dystonia resolved spontaneously and she required extensive pre-treatment with glucocorticoids and benadryl for transfusion of 2 units of platelets to halt expansion of hematoma on account of history of anaphylactic allergy to platelet transfusion in the past. She tolerated transfusion of platelets well and no complication were observed on this occasion.

Conclusions Hermansky-Pudlak syndrome is an autosomal recessive disorder caused by mutations in 1 of 10 known genes responsible to packaging and formation of lysosomes including those of melanosomes and platelet-dense granules resulting in multisystem manifestation of disease. The syndrome is characterised albinism, platelet dysfunction and pulmonary fibrosis. Two subtypes of this syndrome are also known to have immune deficiency likely related to dysfunction of cytotoxic T-cells and NK cells. Platelet dysfunction is thought to be related to dysfunction of specialised storage compartments within platelets which are called lysosome-related organelles. We here present a summary of recent advances in our understanding of this syndrome in hopes to contribute to an effort towards improvements in management or a cure.

DP3 ABSTRACT WITHDRAWN

DP4 AN UNUSUAL CASE OF GALLBLADDER CANCER IN A YOUNG MALE

[1]Sandra Gomez Paz*, [2]Shruti Patel, [2]Kaleem Rizvon. *[1]Internal Medicine, NUMC, East Meadow, New York, USA; [2]Gastroenterology and Hepatology, NUMC, East Meadow, New York, USA*

10.1136/jim-2018-000730.37

Purpose of study Contributing to the literature describing the unusual pathology of gallbladder cancer, particularly with rare presentation (such as young age and without predisposing risk factors).

Methods used A review of cases and literature about gallbladder cancer, with emphasis in demographic and predisposing risk factors.

Summary of results We present a case of a relatively young male without past medical history, who presented with diffuse abdominal discomfort, generalised pruritus, scleral icterus and unintentional five pound weight loss over one month. There was no history of fever, alcohol, tobacco or illicit drug use, family history of cancer, recent travels or medication use. Physical exam showed scleral icterus, jaundice and mild right upper quadrant tenderness. Laboratory tests showed microcytic anaemia, elevated AST (231 U/L), ALT (187 U/L), GGT (723 U/L) and alkaline phosphatase (1082 U/L). Abdominal ultrasound, CT abdomen, and MRCP were performed, which showed highly suggestive of gallbladder cancer with liver and biliary duct involvement with presence of portocaval adenopathies. CT guided liver biopsy confirmed presence of adenocarcinoma of the gallbladder. Stent deployment via ERCP and percutaneous drainage for improvement of obstructive jaundice was not attempted due to lack of ductal dilation and high risk of complications including cholangitis. Incidental finding of bilateral pulmonary embolism on CT was addressed by implementing immediate anticoagulation therapy. Patient was eventually discharged with follow up with gastroenterology and oncology practices.

Conclusions Demographic factors worldwide in the incidence of gallbladder cancer, a rare entity in the western world, are skewed towards female gender, obesity, advanced age (average age is 72), certain bacterial infections (Salmonella, Helicobacter) and underlying pathologies such as cholelithiasis, porcelain gallbladder, pancreaticobiliary maljunction anomalies and chronic inflammatory processes such as primary sclerosing cholangitis. We present the case of a relatively young male with primary gallbladder adenocarcinoma, without any of the risk factors aforementioned, however sharing the known feature of diagnosis at a later stage of this disease process. Even though rare, gallbladder cancer can occur in young male patients with low index of suspicion.

DP5 A CASE OF DECOMPRESSION SICKNESS SYNDROME PRESENTING IN THE LIMBS AFTER DEEP SEA DIVING

Nashreen Anderson*. *Internal Medicine, Nassau University Medical Centre, Brooklyn, New York, USA*

10.1136/jim-2018-000730.38

Purpose of study The aim of this case is to contribute to the literature and augment the understanding of the underlying pathophysiology of Decompression Sickness Syndrome.
Methods used A review of case reports and the literature regarding Decompression Sickness Syndrome.
Summary of results We report a case of a patient with a known history of decompression sickness who presented with numbness and tingling of the right hand as well as the inability to make a fist. He stated that he went deep sea diving to maximum depth of 185ft the day prior. He stated at some point during his dive his right hand glove broke leaving his hand exposed to the water. He stated immediately after ascending he felt numbness and tingling in his right fingers as well as bilateral elbow pain. At this point he placed himself on 100% oxygen. He stated this improved his symptoms and therefore he went home, took an aspirin, and went to bed. At 1 am he woke with a sharp sensation in his right hand and the inability to make a fist actively. However, he had no limitations with passive movement. He stated that last time he had an episode he exhibited neurological symptoms consisting of blurry vision and headache, as well as abdominal pain, oedema, and a questionable rash. At this point he denied any of these symptoms. He was immediately sent to the hyperbaric chamber for therapy. The patient remained in the hyperbaric chamber for 10 hours and experienced no complications after treatment.
Conclusions Decompression Sickness Syndrome (Cassion Disease) is defined as the formation of intravascular and extravascular microbubbles. These bubbles form as the rate of pressure reduction supersedes the rate of inert gases, mainly nitrogen, being eliminated. As these bubbles form and collect, they produce tissue hypoxia which results in symptoms that can affect any organ system. Early hyperbaric therapy has been studied and has shown to improve outcomes by means of decreasing the size of the bubbles and therefore decreasing the effects of hypoxia. Here we present a summary of a case in which early hyperbaric therapy was initiated. We hope to not only further our understanding of this syndrome but also contribute to the efforts in management and advancement of preventative measures.

DP6 EXPLORING ABNORMALITIES IN LUNG MICRORNAS IN IDIOPATHIC PULMONARY FIBROSIS USING EXHALED BREATH CONDENSATE

[1]Nadia Pletukhina*, [2]Lora J Kasselman, [1]Steven H Salzman, [2]Heather A Renna, [2]Allison B Reiss, [1]Priya Agarwala. *[1]Pulmonary and critical care medicine, NYU Winthrop Hospital, Mineola, New York, USA; [2]Biomedical Research, NYU Winthrop Hospital, Mineola, New York, USA*

10.1136/jim-2018-000730.39

Purpose of study Idiopathic pulmonary fibrosis (IPF) is a fatal disease characterised by progressive fibrosis of lung parenchyma. While mechanisms are largely unknown, unremitting fibrosis and scarring are hallmarks. The goals of this study are to define differences in microRNA (miRNA) profile in IPF subject versus healthy control exhaled breath condensate (EBC), the liquid phase of breath containing evaporated and condensed particles derived directly from the airway lining fluid. The miRNA profile from EBC will be compared to that in blood collected from each subject to detect lung-specific miRNA abnormalities relevant to IPF. The ultimate objective is to gain an understanding of the processes mediating fibrosis in order to design novel therapies.
Methods used Under an NYU Winthrop IRB-approved protocol, EBC is collected from IPF subjects and age-matched controls using the the RTubeVOC, a non-invasive handheld disposable device. The miRNA is obtained from EBC with the mirVana miRNA isolation system. Blood is collected by venipuncture for miRNA isolation. Differential miRNA expression values for each sample are assayed using human fibrosis polymerase chain reaction (PCR) arrays and confirmed by QRT-PCR.
Summary of results 22 subjects have enrolled thus far. This is the first attempt in IPF patients to isolate miRNA from EBC and compare miRNA signatures between EBC and blood. Techniques are being refined for extraction of the small amounts of miRNA present in EBC. To date, we have succeeded in obtaining detectable miRNA from EBC and are currently working on obtaining more concentrated miRNA samples. The study is ongoing at this time. Key miRNAs to be targeted include miR-21, miR-155, miR-326, miR-26a, miR-375, miR-101, and miR-192.
Conclusions The advantage of EBC over other techniques such as biopsy is that it allows examination of material from the whole lung. Prior research has identified elevated specific miRNA in the blood of IPF patients which suggests, but does not prove, that its source is the lung. This is why we chose to analyse miRNA in EBC. Profiling of EBC miRNAs in IPF has the potential to yield biomarkers for predicting IPF risk and personalised precision medicine data for managing the disease.

DP7 UNIQUE PRESENTATION OF THROMBOTIC THROMBOCYTOPENIC PURPURA FLARE WITH NORMAL LACTATE DEHYDROGENASE AND HAPTOGLOBIN

Angela Marcelino*, Carol A Luhrs. *Haematology Oncology, SUNY Downstate Hospital, NY, New York, USA*

10.1136/jim-2018-000730.40

Purpose of study Acquired thrombotic thrombocytopenic purpura (TTP) is a hematologic condition causing shearing of the red blood cells due to auto-antibodies to protease ADAMTS13. TTP is a medical emergency with high mortality if left untreated, however, fatalities have drastically decreased with rapid diagnosis and treatment with plasma exchange. Understanding the process of microangiopathic hemolytic anaemia, certain lab values have allowed for easy exclusion of this process, however, we present a case of TTP with normal lactate dehydrogenase (LDH) and haptoglobin, but with dropping platelet count and confirmed TTP-flare.
Methods used A 61-year-old female with extensive cardiac history was transferred to our institution for possible bypass and noted to have recent diagnosis of TTP one week ago in another institution. When the patient presented to our institution, the platelet count was normal, however, noted to be down-trending. A review of her peripheral smear did reveal a subtle amount of schistocytes, however, this was thought to be

residual from her more recent TTP flare just one week prior. The result for the ADAMTS13 was reported as <10% with inhibitor level of 23 u/ml (Ref:<12 u/ml considered negative) and the platelet count dropped to 122, so patient was initiated on plasma exchange (PEX). Throughout her hospitalisation, the haptoglobin was never low and the LDH was only mildly elevated on a few sporadic occasions while on treatment, peaking at a value of 385 U/L.

Summary of results As physicians, we rely on objective assessments, such as lab values for LDH and haptoglobin, to shed insight on possible microangiopathic hemolytic anemias (MAHA), such as that seen in TTP. Hemolysis typically releases lactate dehydrogenase, causing rise in levels, and haptoglobin irreversibly binds free haemoglobin, causing a decrease in levels due to rapid removal by the reticuloendothelial system. However, as this case demonstrates, it is important to be aware that there are exceptions to typically elevated LDH and low haptoglobin levels in hemolytic anemias.

Conclusions It is important to identify and intervene in cases of suspected TTP, however, laboratory work up that we rely on can, in rare cases, defy what we know to be normal, and the clinician has to be aware of these rarities and use clinical judgment.

DP8 INDOLENT CNS RELAPSE IN ADULT T CELL LYMPHOMA

Sparsha Kukunoor*, Elvira Neculiseanu, Angela Marcelino. *Haematology – Oncology, SUNY Downstate, Brooklyn, New York, USA*

10.1136/jim-2018-000730.41

Purpose of study Adult T cell leukaemia and lymphoma is an aggressive peripheral T cell neoplasm associated with HTLV-1. Shimoyoma classified ATLL into 4 subtypes Acute, lymphomatous, chronic and smouldering based on prognosis and clinical features. Acute and lymphomatous types are aggressive with median overall survival (OS) 6 10 months. CNS is more frequent in the lymphoma type with poor prognosis.

Methods used Retrospective chart review and review of literature

Summary of results 78-year-old woman with a history of coronary artery disease, heart failure with reduced ejection fraction of 10 15% presented with bilateral lower extremity weakness and back pain. She also had a history of T cell lymphoma two years ago, when she had bilateral cervical lymphadenopathy. She was treated with one cycle of Cyclophosphamide, Vincristine and Etoposide. Her treatment was complicated by decompensated heart failure requiring hospital admission.

She presented to us with back pain and progressive lower extremity weakness for three weeks. Her exam was pertinent for decreased lower extremity strength. A lumbar puncture showed increased white blood cell count of 45/ul with 79% lymphocytes. Cerebrospinal fluid (CSF) cytology showed numerous large atypical lymphocytes. HTLV-1 serology was reactive Flow cytometry done on CSF showed clonal CD45+, CD7-, CD25 ++cells confirming CNS involvement by Adult T Cell Leukaemia/Lymphoma. She was treated with biweekly intrathecal methotrexate with clearance of her CSF after two treatments. She was transitioned to intrathecal liposomal cytarabine. He received 2 months of intrathecal therapy. A flow cytometry on her peripheral blood showed rare population of atypical T cells similar to CSF. CT scan of her neck, chest, abdomen and pelvis showed no lymphadenopathy.

She again presented 4 months later with similar symptoms and found to have a positive CSF with ATLL cells. She was treated with intrathecal chemotherapy for one month and systemic treatment with Romidepsin for one cycle. She most recently had a hip fracture after a mechanical fall. She is currently residing in a rehab facility and she is asymptomatic.

Conclusions This case illustrates the unique presentation and gives an insight on our treatment approach towards CNS involvement in ATLL. CNS involvement may not always require systemic treatment.

DP9 TWO DECADES OF TRENDS IN BLOOD STREAM INFECTIONS (BSI) IN ADVANCED MALIGNANCY PATIENTS WITH EPITHELIAL BARRIER DISRUPTION (EBD) BUILDING THE CASE OF POPULATION SPECIFIC STUDIES

Michael Haddadin, Sandeep Singh, Swati Vishwanathan, Iuliana Shapira*. *Medicine, SUNY Downstate, Brooklyn, New York, USA*

10.1136/jim-2018-000730.42

Purpose of study To define and characterise EBD in advanced cancer patients with diminished physiologic reserve as defined by Charlson comorbidity index score >7 specific to minority black patient population The very sensitive National Hospital Safety Network (NHSN) definition of nosocomial infections may misattribute blood stream infection to iatrogenic interventions hindering the understanding of the pathophysiology of infections as they relate to the cancer-propitiating host environment. Four decades of reports show infective endocarditis due to Streptococcus gallolyticus (formerly named Streptococcus bovis) to be the final result of asymptomatic persistent bacteremia caused by occult colorectal malignancy and the first manifestation of this cancer. Little is known of black patients with blood stream infections and malignancies.

Methods used We performed a MeSH search of Medline database of published articles from 1997 until September 2017 using a PubMed interface for clinical articles in English. We used key words such as: malignancy, black patients, African American, minority, outcome, survival, sepsis, bacteremia, nosocomial infections, blood stream infection. A qualitative synthesis and narrative review was undertaken

Summary of results Black patients with cancer and blood stream infections represent less than 3% of published literature. A trend towards gram positive bacterial stream infection in all populations of cancer patients with advanced malignancies was seen

Conclusions Blood stream infections and severe sepsis, defined as infection complicated by acute organ dysfunction, occur more frequently and leads to more deaths in black than in white individuals with or without advanced malignancies. Population specific studies to understand risk factors in cancer patients for recurrent blood stream infection, differences in incubation times, the mechanism of immune anergy (deactivation of common immune responses to antigens) needed cancer development and immune tolerance to certain pathogens and lack of typical responses: fever and systemic inflammatory response symptoms lead to under-recognition and under-treatment of minority population; The optimal approach to minimise these disparities may involve designing population specific studies.

DP10 COCCIDIOIDOMYCOSIS OF THE EPIDIDYMIS AND TESTIS PRESENTING AS A TESTICULAR MASS

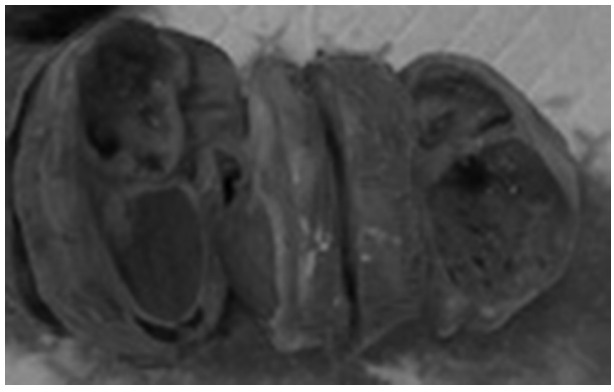
Nazanin Sheikhan*, Arash Heidari, Shahab Hillyer. *Internal Medicine, UCLA-Kern Medical Centre, Woodland hills, California, USA*

10.1136/jim-2018-000730.43

Purpose of study To present a rare case of dissemination of Coccidioidomycosis to the epididymis, presenting as a testicular mass.

Methods used Retrospective case study; statistical analysis was not performed.

Summary of results A 26-year- old Hispanic male with no medical history presented with a persistent right testicular mass, which initially manifested 2.5 years prior. He initially presented with urinary retention and was diagnosed with epididymitis and prescribed a course of Levofloxacin. Following completion of the course of Levofloxacin, patient had resolution of his urinary retention but the right testicular swelling persisted. Eventually, patient sought medical care two years later, which revealed a heterogeneous prominent right epididymis with multiple hypoechoic cysts and a small right hydrocele on ultrasound. Due to concern for a neoplasm, patient was referred to our facility for Urological evaluation. Upon work up, testicular tumour markers came back negative. A repeat ultrasound revealed two exophytic and contiguous hypoechoic masses in the right testicle, with a small amount of vascularity within these nodules. Subsequently, patient underwent a right radical orchiectomy. Gross surgical pathology revealed two cystic cavitary lesions; one in the inferior portion of the testis and the other involving the epididymis. Biopsy showed no evidence of malignancy. However, fungal stain was consistent with *Coccidioides spherules* with endosporulation. Later on, Coccidioidomycosis serology showed positive immunodiffusion IgG and comp fixation of 1:8. Patient was started on Fluconazole 800 mg daily. On further history taking, patient revealed that after he relocated to San Joaquin Valley three years prior, he was diagnosed with a self-limiting pulmonary infection with associated fevers, rigours, cough, and diffuse skin rashes with target lesions on his chest and abdomen.



Abstract DP10 Figure 1 Two cystic cavitary lesions; one in the inferior portion of the testis and the other involving the epididymis

Conclusions Coccidioidomycosis is endemic to the Southwestern United States and Northern Mexico. Most patients have primary Coccidioidomycosis with pulmonary involvement. Dissemination to the genitourinary system is very rare. This case demonstrates the importance of considering fungal infections in the differential diagnosis of a focal testicular mass or swelling, especially when located in areas endemic to certain fungal infections.

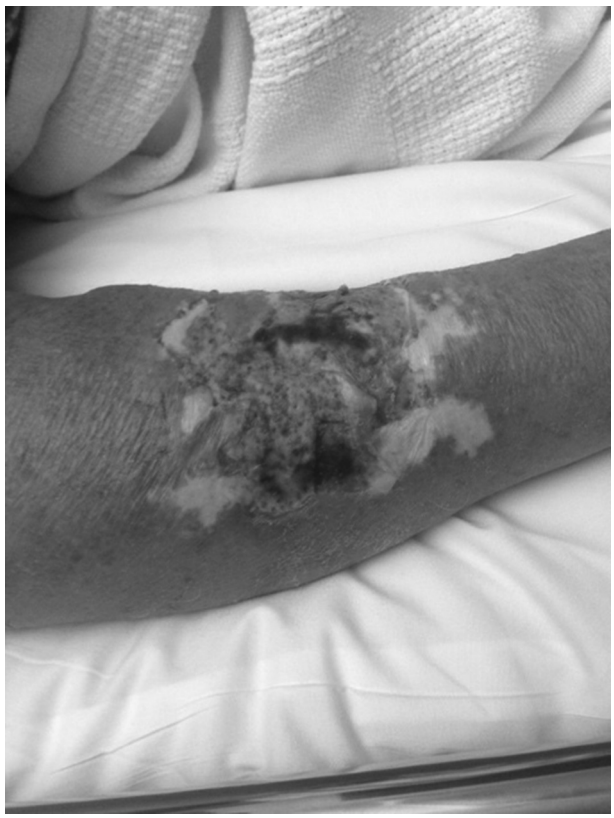
DP11 NECROTIZING SKIN INFECTION CAUSED BY STREPTOCOCCAL AGALACTIAE: CASE STUDY

Shane M Hagen*, Amina Chaudry, Nick A DiLoreto, James B Lewis. *Department of Medicine, Memphis VAMC, Memphis, TN, Infectious Diseases, University of Tennessee Health Science Centre, Memphis, Tennessee, USA*

10.1136/jim-2018-000730.44

Purpose of study Despite the growing recognition of *Streptococcus agalactiae* (also known as Group B Strep (GBS)) as an emerging cause of invasive disease in non-pregnant women, its identification as a source of necrotizing skin infections in the adult population remains rare. As few as 22 cases have been reported per this teams knowledge. Recent studies have suggested that certain GBS strains have acquired the ability to change expression of virulence factors during the course of infection. It is speculated that these adaptations contribute to the formation of bacterial subpopulations capable of causing necrotizing infection. Thus, as the rate of of invasive GBS infections rise, clinicians must be aware of the growing potential of GBS to promote necrotizing skin infections.

Here we describe a case of an elderly Caucasian male with a medical history significant for chronic kidney disease and Type II diabetes mellitus presenting to the emergency department (ED) with right forearm pain and swelling. The patient reported scraping his right arm on exposed brick 4 days prior to presentation, resulting in a 2 2 cm cut. Over the course of several days, the size of the cut increased gradually until the day before presentation when it became purulent and patient began experiencing chills and altered mentation. On admission to the ED, the patient recorded a low-grade fever and met criteria for sepsis (BP 100/64; WBC 5.39; Lactic acid 2.8; qSOFA 2). At that time, a large wound located on the right anterior forearm and measuring 9 12 cm was inspected. The wound was actively draining purulent fluid in its centre and showed several enlarging areas of black, necrotic tissue at the periphery. Due to concern for necrotizing infection, the patient was started on IV Clindamycin, Vancomycin, and Piperacillin/Tazobactam and was taken to the operating room for diagnostic incision and debridement (I and D) with tissue sampling. Debridement excluded the presence of underlying fascial or muscle involvement and the diagnosis of necrotizing cellulitis was confirmed. Following I and D, the patient defervesced and was discharged home with a course of Augmentin and Doxycycline following positive wound culture for GBS.



Abstract DP11 Figure 1

DP12 CHECKPOINT INHIBITORS IN HEAD AND NECK CANCER: CURRENT STATUS AND PERSPECTIVES

Bachar Samra*, Eric Tam, Babak Baseri, Iuliana Shapira. *Haematology/Oncology, SUNY Downstate Medical Centre, Brooklyn, New York, USA*

10.1136/jim-2018-000730.45

Purpose of study The emergence of immunotherapy has revolutionised the treatment of metastatic solid tumours. Checkpoint inhibitors continue to garner new indications for use in different tumour types and various treatment settings. Our aim is to review the current knowledge on the role of the immune system and checkpoint inhibitors in head and neck squamous cell carcinoma (HNSCC). We will focus on the landmark trials that led to regulatory approvals of pembrolizumab and nivolumab. We also provide an overview of current trials in clinical development and we highlight the need for predictors of response to these novel agents.

Methods used An exhaustive literature search was performed using PubMed and abstracts from the American society of clinical oncology, European society of medical oncology. Our search utilised the following terms: immunotherapy, checkpoint inhibitor, and head and neck cancer. Clinicaltrials.gov was searched for ongoing trials with checkpoint inhibitors in HNSCC.

Summary of results Nivolumab has improved survival and has shown better tolerability compared with standard chemotherapy in patients with platinum refractory recurrent/metastatic (R/M) HNSCC. On the other hand, pembrolizumab, although better tolerated than chemotherapy, did not show overall survival benefit. However, subgroup analysis revealed greater benefit in programmed death-ligand 1 (PD-L1) positive patients. Checkpoint inhibitors have now become the standard of care in platinum refractory R/M HNSCC. Response rates and perhaps survival benefit seem to be higher in patients with HPV +status and increased PD-L1 expression.

Conclusions These are exciting times for immunotherapy in HNSCC. The approval of pembrolizumab and nivolumab in the recurrent and metastatic setting has been a therapeutic breakthrough with benefit in both survival and toxicity profile. More research is needed to identify more reliable biomarkers than PD-L1 (such as tumour mutational burden) that can improve patient selection and help predict response. We are also awaiting trial results of checkpoint inhibitors in upfront and adjuvant setting as well as combined with other therapeutic modalities.

DP13 EPITHELIAL BARRIER DISRUPTION (EBD) IS THE SOURCE OF BLOOD STREAM INFECTION (BSI) IN MINORITY INNER-CITY BLACK PATIENTS WITH ADVANCED MALIGNANCIES AND HIGH BURDEN OF CO-MORBIDITIES: IMPLICATION FOR POPULATION SPECIFIC STUDIES

[1]Michael Haddadin, [2]Josephine Anuforo, [1]Eric Tam, [1]Iuliana Shapira*. *[1]Medicine, SUNY Downstate, Brooklyn, New York, USA; [2]Medicine, St Johns Episcopal Hospital, Far Rockaway, New York, USA*

10.1136/jim-2018-000730.46

Purpose of study To estimate the burden of bacterial infections in black inner city minority population with advanced malignancies and high comorbidity burden. SUNY Downstate is the safety net hospital serving Central Brooklyn, where over 85% are Blacks. One in three live below 100% of the Federal Poverty line, almost 17% are unemployed, and over 26% are un/under-insured. Cancer is the leading cause of death in Central Brooklyn and a major public health problem for this population and requires a more precise understanding of blood stream infections and their relation to cancer.

Methods used A retrospective review of consecutive blood stream infections were evaluated as part of performance improvement process to detect trends of microorganism resistance and avoid using inappropriate treatments for infections in cancer patients. Two group of infected patients were analysed those with central venous catheters, versus those without. Characteristics of patients in different groups were compared using Chi-square or Fisher's exact tests for categorical variables, and Wilcoxon rank-sum test for continuous variables. $p \leq 0.05$ (two-tailed) considered statistically significant.

Summary of results Bacterial stream infections in black inner-city patients with advanced malignancies and Charlson comorbidity index >7 occur as frequent in patients with and without central venous catheter rate of (28%; 33% $p=0.1$) In black patients with advanced malignancies defined by metastatic disease epithelial barrier disruption (EBD) is a source of blood stream infections. Finessing understanding of nosocomial infection in minority population of cancer patients with high burden of comorbidity is needed.

Conclusions Understanding differences in type, incubation times and clinical manifestation of BSI due to EBD are urgently needed to decrease the unintended harmful consequences of the broad NHSN surveillance definition of nosocomial infections. Evidence from our project will lead more precise applications (NHSN) surveillance and improve its specificity to decrease misattribution of the nosocomial

interventions as source of the bacteremia in this specific cancer patient population.

DP14 SURVIVAL FROM CANCER AND BLOOD STREAM INFECTIONS (BSI) ATTRIBUTABLE TO EPITHELIAL BARRIER DISRUPTION (EBD) IN MINORITY BLACK PATIENTS WITH ADVANCED MALIGNANCIES AND CHARLSON COMORBIDITY INDEX >7

Michael Haddadin, Neha Maithel, Jini Veith, Iuliana Shapira*. *Medicine, SUNY Downstate, Brooklyn, New York, USA*

10.1136/jim-2018-000730.47

Purpose of study To understand the types of infection, resistance to antibiotics and overall survival in advanced cancer patients with or without blood stream infections and common immune anergy in cancer and infectious process. Black cancer patients with advanced malignancy have far worse outcomes (30% lower overall survival) than white patients. Reasons for this gap in survival may be linked to differences in immune anergy that predisposes to both cancer and infections.

Methods used Overall survival (OS) defined as the time from cancer diagnosis to death from any cause (as reported to tumour registry). We did a retrospective review of consecutive BSI were evaluated as part of performance improvement process to detect trends of microorganism resistance and avoid using inappropriate treatments for infections in cancer patients. Two group of infected patients were analysed those with central venous catheters, versus those without. Characteristics of patients in different groups were compared using Chi-square or Fisher's exact tests for categorical variables, and Wilcoxon rank-sum test for continuous variables. $p \leq 0.05$ (two-tailed) considered statistically significant. A multivariable logistic regression model was constructed to identify baseline factors independently associated with one year mortality.

Summary of results A 50% better median OS (HR=0.67; 95% confidence interval 0.430.78) was seen in advanced cancer patients with no BSI detected at any time points during their care compared to those with BSI detected.

Conclusions Black patients with advanced malignancies often have blood stream infections (BSI) and if this occurs in the hospital the infection is attributed to nosocomial intervention. They often depend on central catheters to deliver life prolonging or life-saving anti-cancer therapies. Little is known and published about microorganism incubation times, epithelial barrier disruption, sepsis, systemic inflammatory symptoms definition in minority black population. Population specific studies of mechanisms explaining the immune anergy to both malignancy and BSI may help understand and alleviate cancer disparities.

DP15 A RARE CASE OF GASTRIC PLASMACYTOMA

[1]Sandra Gomez Paz*, [1]Gagan Raju, [2]Rabab Hajar, [2]Kaleem Rizvon. *[1]Internal Medicine, Numc, East Meadow, New York, USA; [2]Gastroenterology and Hepatology, Numc, East Meadow, New York, USA*

10.1136/jim-2018-000730.48

Purpose of study Contributting to literature for further understanding of combined plasma cell neoplasms incidence and changing demographic factors, particularly with gastrointestinal involvement.

Methods used A review of literature and case reports of plasma cell neoplasms, with emphasis on extramedullary plasmacytomas with gastrointestinal (GI) involvement.

Summary of results We report the case of a middle aged Caucasian man, with history of solitary right sacral plasmacytoma, who presented with generalised weakness and low Hb (5.4 g/dL). Physical exam showed pallor and mild tachycardia. There were no signs of active of GI bleed but stool guaiac was positive. Laboratory investigations showed elevated alkaline phosphatase (266 U/L) with normal liver and renal function. Transfusion of packed red blood cells was performed until restoration of Hb to baseline (8.2 g/dl). Esophagogastroduodenoscopy findings included multiple 11.5 cm polypoid lesions in lesser curvature of stomach and hiatal hernia, without evidence of bleeding. Polyps biopsies results showed diffuse plasma cell infiltrate of lamina propria with large atypical giant cells and immature forms, suggestive of plasma cell neoplasm involving gastric mucosa. Bone marrow biopsy showed plasma cell myeloma, however, at the time of diagnosis of solitary sacral plasmacytoma a year prior, bone marrow biopsy was negative for myeloma. Recurrent drops in Hb were attributed to hemophagocityc syndrome. The patient was eventually stabilised and discharged with surveillance by Haematology and Gastroenterology practices.

Conclusions About 80% of EMP occurs in the upper respiratory tract, with only 5% of cases being of GI origin, most commonly affecting the small bowel, stomach, colon and oesophagus respectively. EMP is predominantly described in Japanese females of 56 years median age. Although multiple site EMP has been sufficiently reported, the combination of different types of plasma cell neoplasms present at once has not been well described. In our case, diagnosis of two different types of plasma cell neoplasms was made on a middle aged Caucasian man, providing unique characteristics from diagnostic and epidemiologic standpoints when compared to the current available data.

DP16 UNEXPLAINED HYPOKALEMIA WITH PARAPARESIS IN YOUNG ADULT, THINK THYROTOXIC PERIODIC PARALYSIS!

Mohammad K Islam*, Chandralekha Ashanghari, Luis Ruiz, Kaylee Shepherd. *Internal Medicine, Texas Tech University HSC Amarillo, Amarillo, Texas, USA*

10.1136/jim-2018-000730.49

Purpose of study We are reporting a case of 33-year-old African American male presenting with very low serum potassium level with paraparesis, eventually diagnosed with Thyrotoxic Periodic Paralysis (TPP).

Methods used A 33-year-old patient was admitted with sudden onset of symmetrical lower limb weakness for 1 day. He was asymptomatic when he went to sleep the previous night, but was unable to move his legs when he woke up the following morning. Denied any respiratory distress, recent diarrhoea or respiratory tract infections, tick bite. Denied any family history of hypokalemia or autoimmune diseases. Vital signs were within normal limits and physical exam showed diminished strength 2/5 in proximal muscles and 4/5 in distal muscles in bilateral lower extremities, no sensory deficit, DTRs were 1+, plantar reflex downgoing bilaterally, cranial nerves were intact.

Initial lab findings: CBC within normal limit, Na 142, K 1.7, Cl 103, HCO3 26, BUN 15, creatinine 0.8, Ca 8.9, Mg 1.5. Thyroid function tests showed free T4 2.40 ng/dl and TSH 0.05 mIU/mL. Thyroid-Stimulating Immunoglobulins 461%. Radio-iodine thyroid uptake nuclear scan showed 4 hour thyroid uptake of 39.8%, 24 hour uptake of 63.6%, homogenous uptake of both lobes, consistent with Graves disease. He responded well with potassium replacement and was discharged with Methimazole. Outpatient endocrine follow up was arranged for radio-iodine ablation therapy.

Summary of results A typical TPP attack is characterised by a transient episode of muscular weakness usually involving lower limbs. The muscular weakness may range from mild weakness to total flaccid paralysis. DTR are markedly diminished with hypotonia. Sensory functions, bowel and bladder are not affected. Na-K ATPase pump activity is augmented by high circulating levels of thyroid hormones, leading to hypokalemia and subsequent periodic paralysis. Treatment of TPP includes immediate potassium replacement therapy and avoidance of precipitating factors. The definitive treatment of TPP involves control of hyperthyroidism using antithyroid drugs, radioiodine ablation or thyroidectomy.

Conclusions Our case reminds physicians about TPP as an important differential of hypokalemia with paraparesis, early diagnosis and treatment of which will prevent serious cardiac complications and fatal outcome.

DP17 IMPROVING TIME TO HOSPITAL ADMISSION FROM THE PAEDIATRIC EMERGENCY DEPARTMENT AT A LARGE ACADEMIC CHILDRENS CENTRE

Hanae Fujii-Rios*, Ted Kouo, Keith Kleinman, Lucas Falco, Amanda O'Halloran, Kameron Rogers, John Creagh, Julia Kim, Oluwakemi Badaki-Makun, Therese Canares. *Paediatrics, Johns Hopkins, Baltimore, Maryland, USA*

10.1136/jim-2018-000730.50

Purpose of study Increased lengths of stay in the paediatric emergency department (PED) strain hospital resources and correlate with worse patient outcomes. In 2015, average PED boarding time (admission order time to PED departure) at our urban, academic, tertiary-care childrens hospital was 14 min (10%) longer than the national benchmark. Our primary aim was to decrease median PED boarding times by 10% within 6 months among general paediatrics patients. Our secondary aim was to decrease the time from admission order placement to acceptance page by inpatient resident.

Methods used From October 2016-October 2017, a streamlined resident acceptance paging process for patients admitted from the ED was implemented, no longer requiring inpatient residents to examine patients in the ED prior to accepting admissions. In PDSA cycle 1 (October 2016-March 2017), biweekly educational meetings, reminder signs on computers and mobile app paging were used to support the acceptance paging process to residents responsible for sending pages accepting care for admitted patients. In PDSA cycle 2 (August-November 2017), monthly verbal reminders were given about sending acceptance pages on stable patients prior to examination. Our primary process measure was PED boarding time. Other process measures included acceptance page time. Run charts were utilised to analyse boarding/acceptance page times. T-tests compared mean boarding times pre-post intervention.

Summary of results Median monthly boarding times decreased by 27 min, from 140 to 113 min ($p<0.05$). The run chart demonstrated a shift with 14 consecutive months of median boarding times below the pre-intervention median. Mean boarding times decreased by 36 min, from 170 to 134 min ($p<0.05$). In PDSA cycle 2, mean acceptance page times did not significantly decrease (89 to 86 min, $p=0.7$).

Conclusions Implementation of a streamlined resident acceptance paging process improved PED boarding times while paging acceptance times remained unchanged. Future PDSA cycles should address sustainability of resident admission workflow, and evaluate other factors (nursing, environmental) affecting prolonged PED boarding times.