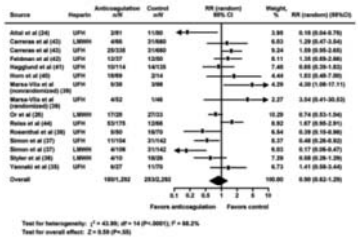
ative risk 0.90; 95% CI 0.62–1.29). Relative risk estimates differed according to the type of transplant recipient, study design, intervention, and outcome definition. However, all the cohort studies had methodologic limitations, including biases in selection and comparability. The results of 1 of 3 randomized controlled trials may have been affected by delayed introduction of anticoagulation. A second trial enrolled patients who received conventional chemoradiotherapy and were in an early stage of their disease. The relative risk was 0.18 (95% CI 0.04–0.78), but the trial had limited generalizability. The third trial was a pilot study with a small sample size (relative risk 0.74; 95% CI 0.53–1.04). **Conclusions:** Significant heterogeneity and methodologic weaknesses preclude drawing a meaningful conclusion from the pooled analysis, but the results of 2 randomized control trials suggest that prophylactic anticoagulation may help prevent veno-occlusive disease. However, a large randomized controlled trial is needed for confirmation.



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CARDIOVASCULAR SCREENING USING PULSE PRESSURE RESPONSE TO HANDGRIP. J. Iskarous, R. Barndt, N. Mina, O. Abdelmelek, J. Huang, Bethel Public Service Clinic, Downey, CA.

Our pilot studies (PS) show that pulse pressure (PP) response to isometric handgrip (IH) provides significant additional information in the prediction of cardiovascular (CV) disease. The combination of the PP and the rise in pulse pressure (RPP) during IH enabled the prediction of high systemic vascular resistance (SVR), low cardiac output (CO), degree of BP control, aortic collagen, and coronary artery (CA) risk. Prospective studies (ProS) were done using a random sample of the general population, ages 50–65, 1/1 male/female, all Caucasian, compared to normal controls (C) (matched by age/sex and race). BP was recorded (left arm) at rest and with IH (right hand at 5 psi for 3 minutes) recording RPP. Measurements were made of systolic blood pressure (SBP), PP, RPP, systolic time intervals (STI), systemic vascular resistance (SVR in standard units), and CO and aortic collagen (AC) by transthoracic 2D echocardiography. PP and RPP were used to predict right coronary artery stenosis (RS), left anterior discending stenosis (LS), and circumflex stenosis (CS) by previous PS predicted-found formula vs angiogram (r = .96, p < .001). All measurements were done by methods previously reported by our clinic. STI is a measure of adrenergic neurovascular tone (STI = PEP/LVET × 100%) that increases RPP and SVR, decreasing the central blood volume (CBV) at STI < 30. Exclusions from the study were smokers, diabetics, and LDL > 125. Group (G) 3 was treated (3Rx) with tenormin 12.5–100 mg/day for 10 years with IH measured every 3 months and all other serial measurements made annually. All data were placed into a blind matrix for analysis later. Data were grouped using PP and RPP PS criteria. **Results:** Group means are shown. X = Not measurable due to high SVR.

G	*#*	*SBP*	*PP*	*RPP*	*STI*	*CO*	*SVR*	*AC*	*LS*	*RS*	*CS*	*RBV*
C	100	110	40 (± 5)	9	53	5.5	1,120	17	0	0	0	0
1	50	92	40 (± 5)	35*	25*	2.3*	1,983*	I7	X	X	X	−32*
2	50	150*	70 (± 15)	30*	27*	2.8*	1,787*	47*	X	X	X	−29*
3	50	152*	72 (± 15)	9	33*	4.5	1,566	49*	39*	61*	48*	−3
3Rx	50	120	40 (± 5)	8	52	5	1,232	18	2	1	0	−2

*Significant difference from GC at p < .01 by t-test. RBV = reduced CBV (by hemoglobin dilution during Rx). In G1 and 2 PP and RPP (> 25) predicted low CO and low STI with high SVR, showing a need for therapy. G3 had normal RPP and required reduction of SBP with Rx. 3Rx shows regression of AC and predicts CA regression. Thus, PP and RPP screening is a rapid method to assess patient CV status.

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METABOLIC SYNDROME IN ADOLESCENTS TREATED FOR BIPOLAR DISORDER. V. Kafantaris, E. Saito, A. Berest, C. Dombrowski, J. Hirsch, North Shore-LIJ Research Institute, Glen Oaks, NY.

Background: Metabolic syndrome can be a serious complication of treatment with psychotropic medications, particularly the atypical antipsychotics. **Method:** Adolescents with bipolar I disorder who were taking at least one mood stabilizer (divalproex sodium and/or lithium) and an antipsychotic medication (aripiprazole, olanzapine, risperidone, quetiapine, or ziprasidone) were assessed at baseline and every 12 weeks thereafter. We defined the metabolic syndrome as three or more of the following five criteria: (1) triglyceride level ≥ 110 mg/dL, (2) high-density lipoprotein (HDL) ≤ 40 mg/dL, (3) body mass index (BMI) ≥ 95th percentile, (4) fasting glucose level ≥ 100 mg/dL or fasting insulin level ≥ 17 µU/mL, and (5) blood pressure ≥ 90th percentile. We present the prevalence of the metabolic syndrome among adolescents with bipolar I disorder treated with psychotropic medications and compared subjects with metabolic syndrome to those without it on certain variables using t-tests. **Results:** Thirty-seven adolescents (20 M, 17 F, mean age = 14.90 years, SD = 1.83) with mean follow-up of 36.3 weeks (SD = 18.9) had at least two fasting laboratory evaluations 12 weeks apart. Twelve of the 37 adolescents (32.4 %) met criteria for metabolic syndrome at one or more time points. As expected, BMI at week 24 was significantly higher in the group with metabolic syndrome (mean BMI = 32.8 kg/m^2) than without (mean BMI = 25.0 kg/m^2, p < .0001). We compared the 12 subjects who "ever met" criteria with those who "never met" criteria on age, gender, race, BMI, fasting glucose level, insulin, lipid profiles. The baseline BMI (p < .0185), weight (p < .0094), glucose (p < .0678) and insulin levels (p < .0793), and HOMA (p < .0432) were significantly higher in the ever-met group compared to never-met group. **Conclusions:** About one-third of our study sample developed the metabolic syndrome during treatment with a combination of a mood stabilizer and an atypical antipsychotic medication. Those subjects had significantly higher baseline weight, BMI, fasting glucose and insulin levels, and HOMA.

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CORRELATION BETWEEN HYPERTONIC SALINE PD_{20} AND METHACHOLINE PC_{20} IN ASTHMA. S. Kazani, J. Sadeh, S. Bunga, N. Khan, M.E. Wechsler, A. Deykin, and E. Israel, Brigham and Women's Hospital, Harvard Medical School, Boston, MA.

Aim: Studies have reported contradictory results on the relationship between airway hyperresponsiveness to methacholine (Mch) and that elicited by hypertonic saline (HS) inhalation. We investigated the correlation between Mch-PC_{20} and HS-PD_{20} in mild asthmatics who had performed both challenges in a research setting. **Methods:** We assembled data on mild asthmatics on prn β-agonists, with a history of positive response to Mch (PC_{20} ≤ 8 mg/mL), who had undergone a staged 3% saline challenge. Mean time between challenges was 23 months (range 0.1–74, SD 21). We also compared the bronchial reactivity to exhaled breath condensate (EBC) pH, a putative marker of airway inflammation. **Results:** Subject data:

N	24
Age (yr)	34 ± 10 (22–57)
M:F	10:14
FEV_1 (% pred)	87 ± 15 (62–112)
Mch-$PC_{20\ mg}$/mL*	0.97 (0.57 ± 1.63)
HS-$PD_{20\ mL}$*	24.97 (16.62 ± 37.51)
EBC pH	8.15 ± 0.80 (5.19–8.65)

*Geometric mean (95% CI).

Of the 24 subjects, 16 (67%) were responsive to the HS challenge. Nonresponders were assigned an HS-PD_{20} value of 74 mL. HS-PD_{20} correlated significantly with Mch-PC_{20} (r = .52, p = .0089). EBC pH did not have a significant relationship with either HS-PD_{20} or Mch-PC_{20}. **Conclusion:** HS and Mch reactivity provide similar assessments of airway reactivity in asthmatics not on controller medications. Considering the stability of the correlation, these data suggest that HS may be a substitute for Mch challenge. Neither measure of hyperresponsiveness correlates with EBC pH.

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VERIFIABLE DONOR DEATHS IN LIVING DONOR LIVER TRANSPLANTATION. J.R. Kenison, P. Adam,* C.M. Lo,# J.F. Trotter, University of Colorado Health Sciences Center, Denver, CO; *Paul Brousse Hospital, Paris, France; #University of Hong Kong, Hong Kong.

Background: In living donor liver transplantation (LDLT) the hepatic lobe donor incurs a measurable risk, the most important of which is death. The actual risk of death following a donor hepatectomy is unknown because of the absence of a sufficiently large database to allow an accurate determination of this infrequent but devastating outcome. In the absence of a definitive estimate of the risk of donor death, the medical literature has become replete with anecdotal reports of donor deaths, which in many cases are based on verbal reports, circularly referenced or unsubstantiated. Because donor death is one of the most important outcomes of LDLT, we performed a comprehensive survey of the medical and lay literature to provide a referenced source of worldwide donor deaths. **Methods:** We reviewed all published articles available from *PubMed* and from the lay literature (using <www.google.com> and <http://www.refdesk.com/paper.html>), which reported donor outcomes from 1989 to October 2005. We classified each death as definitely, possibly, or unlikely related to donor surgery. **Results:** There were a total of 16 deaths in living liver donors reported in the medical and lay literature, as shown in the Table. Ten were "definitely," two were "possibly," and three were "unlikely" related to donor surgery. The estimated total number of LDLT's performed in the United States is 2,000 and worldwide is 4,800. The estimated rate of donor death definitely related to donor surgery is 3/2,000 or 0.15% in the United States and 11/4,800 or 0.229% worldwide. The rate of donor death that is definitely or possibly related to the donor surgery is 5/2,000 or 0.25% in the United States and 14/4,800 or 0.292% worldwide. **Conclusion:** The purpose of this analysis is (1) to provide a referenced source document of living donor deaths published in the medical and/or lay literature, (2) to provide a better estimate of donor death rate associated with this procedure, and (3) to provide an impetus for centers with unreported deaths to submit these outcomes to the liver transplantation community.

Continent/Country	*# of Deaths*	*Relation to Surgery*	*Time of Death Post-Tx*
Asia	4	3 def./0 pos./1 Unl.	9 d, 10 mo, 2 yr, 3 yr
Europe	5	4 def./0 pos./1 unl.	2 d, 4 wk, 3 yr, ?, ?
USA	6	3 def./2 pos./1 unl.	3 d, 3 d, 21 d, 16 mo, 22 mo, 23 mo,
South America	1	1 def./0 pos./0 unl.	7 d

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INTERACTION OF DULOXETINE HYDROCHLORIDE WITH WARFARIN CAUSING PERSISTENT, SEVERE ELEVATION OF INTERNATIONAL NORMALIZED RATIO. Q. Khalil, C.J. Glueck, M. Winiarska, P. Wang, Cholesterol Center, Jewish Hospital, Cincinnati, OH.

To report interaction of Cymbalta (duloxetine hydrochloride) with warfarin leading to persistent, severe elevation of an INR. A 44 year old woman, homozygous for the factor V Leiden mutation, receiving warfarin (10 mg/day) for 1 year after an ischemic stroke, with a stable INR (2.17 ± 0.51) for the year, was evaluated by us 30 days after development of petechiae-purpura (day 94, Fig. 1). Serial measures were taken for INR and liver function tests (LFTs), and plasma warfarin was measured on day 85. Measures were taken on day 94 for fibrinogen, vitamin K-dependent clotting factors, and with repeat measures of factors II and X on day 98 (Fig. 1). No drugs taken daily over the previous year were changed (warfarin, atorvastatin, lamotrigine, topiramate, clorazepam, albuterol); however, Cymbalta (30 mg/day), a selective serotonin and norepinephrine reuptake inhibitor (SSNRI), was added by the psychiatrist at day 0 and was continued until day 94. Having unexpectedly high INR (5.0) on day 55, warfarin was stopped, but Cymbalta was continued. Despite cessation (documented by pill count) of warfarin, INR continued to rise to > 19 on day 85, when plasma warfarin level was 5.3 µg/mL (therapeutic range 2–8 µg/mL), 30 days after the last warfarin dose. INR was briefly reduced to 2.7 only by vitamin K (IV) on day 85. On day 94,