31 **TROPHOBLAST VIABILITY: CAN IT BE USED AS A PREDICTOR OF PREECLAMPSIA?** DONNA NEALE[1], KAFUI DEMASIO[1], JESSICA ILLUZI[2], ROBERTO ROMERO[3], GIL MOR[2]; [1]Yale University, Maternal-Fetal Medicine, New Haven, CT; [2]Yale University, Obstetrics and Gynecology, New Haven, CT; [3]Wayne State University, Maternal-Fetal Medicine, Detroit, MI

OBJECTIVE: To determine whether serum from preeclamptic patients renders trophoblast cells more sensitive to Fas mediated apoptosis.

STUDY DESIGN: H8 trophoblast cells were incubated with serum from preeclamptic women and normotensive controls. Either anti Fas or blocking anti Fas ligand (FasL) antibodies were added to the cells. Cell viability in three conditions: serum alone, serum + anti Fas, and serum + anti Fas L was assessed using the Cell Aqueous T96 Assay.

RESULTS: A significantly higher decline in mean cell viability was detected when anti Fas mAb was added to the study group vs the control group (-13.5 versus -397.67; $P = .022$). Conversely, treatment with anti-FasL mAb induced a statistically significant increase in mean cell viability when added to the study group vs control group (245 versus -180.67; $P = .031$).

CONCLUSION: Trophoblast from normal pregnancies have been previously shown to be resistant to Fas mediated apoptosis. In our study, preeclamptic serums increased trophoblast sensitivity to Fas mediated apoptosis when compared to serums of normal controls. When the same serums were exposed to a blocking anti Fas L, a protective effect was detected. These findings may explain the manifestations of poor placental function (ie fetal growth restriction, abnormal umbilical doppler velocimetry, oligohydramnios, and abruption) seen in pregnancies complicated by preeclampsia. Moreover, this assay may be the first steps in the development of a screen test for those patients at high risk for preeclampsia.

32 **GROWTH POTENTIAL VERSUS GESTATIONAL AGE AT DELIVERY** RADEK BUKOWSKI[1], GEORGE SAADE[1], FERGAL MALONE[2], MARY D'ALTON[3], GARY HANKINS[4]; [1]University of Texas Medical Branch, Obstetrics and Gynecology, Galveston, TX; [2]Columbia University, Obstetrics and Gynecology, New York, NY; [3]Columbia University, Obstetrics & Gynecology, New York, NY; [4]University of Texas Medical Branch at Galveston, Obstetrics & Gynecology, Galveston, TX

OBJECTIVE: The percentile of growth potential (GP) is a measure of the actual fetal weight relative to the optimal weight in the absence of pathological conditions. The objective of this study was to determine the relationship between GP and gestational age at delivery (GAD).

STUDY DESIGN: 3566 singleton pregnancies enrolled in the First And Second Trimester Evaluation for Aneuploidy (FASTER) trial were studied. GAD was based on CRL at 104/7-14 weeks. For each fetus, GROW v.2 software was used to generate an individual optimal growth curve and calculate GP for birthweight based on independent factors identified as determining fetal weight from multivariate analysis of 40,000 uncomplicated term pregnancies. Patients were divided into dichotomous clusters according to GAD. Polynomial regression, Chi-square and multiple linear regression analyses were used.

RESULTS: The best-fit for %GP as a function of GA was a 2nd degree polynomial with the highest GP between 34-40 weeks ($P = .0004$). Significantly more fetuses delivered ≤34 weeks were <10%ile of GP (33.9 vs 8.8%; $P < .0001$). Also more patients delivered at ≥41 and ≥42 weeks were below the 10%ile of GP (12.8 vs 8.9%; $P = .04$ and 20 vs 9.1%; $P = .02$, respectively). Fetuses <10%ile of their GP were at significantly higher risk of delivery at ≤34 weeks (5.8 vs 1.1%; $P < .0001$) or ≥41 weeks (12.7 vs 8.9%; $P = .04$) compared with those with GP ≥10%ile. The relationship between GAD and GP remained significant after controlling for birthweight.

CONCLUSION: Early preterm and postdate deliveries are associated with severe impairment of GP. Such a severe impairment of growth may increase the fetal risk from prolongation of pregnancy. If prenatal assessment of GP proves reliable, our current management would require reevaluation (NIH R01 HD38652).

33 **THROMBOPOIETIN IN PRE-ECLAMPSIA AND HELLP SYNDROME** JEFFREY JOHNSON[1], DOUGLAS KNISS[2], PHILIP SAMUELS[2]; [1]Ohio State University, Maternal-Fetal Medicine, Newton, MA; [2]Ohio State University, Obstetrics and Gynecology, Columbus, OH

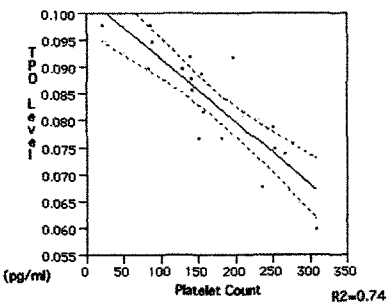
OBJECTIVE: To determine the relationship between thrombopoietin (TPO) and platelet count in patients with pre-eclampsia.

STUDY DESIGN: Patients diagnosed with pre-eclampsia or HELLP Syndrome between 28 and 42 weeks gestation were recruited. Diagnosis of pre-eclampsia and HELLP Syndrome were based on standard criteria. Patients with a history of autoimmune disease or other causes of thrombocytopenia were excluded. Blood was obtained for platelet count, and serum was stored at -80°C until assays were performed using a standardized sandwich enzyme immunoassay. Control specimens were obtained for platelet count and TPO levels from healthy patients between 28-42 weeks. Paired t testing was performed, with $P = .05$ considered significant.

RESULTS: Nineteen patients met diagnostic criteria for pre-eclampsia, four of which had HELLP Syndrome, and their data was evaluated separately. Median platelet count in pre-eclamptic gravidas was 171,000/mm^3 (range 22-308). Sixteen control patients had a median platelet count of 254,000/mm^3 (range 158-457) ($P = .001$). In the pre-eclamptic group, the mean TPO level was 83 pg/ml (range 68-98) and for the control group was 35 pg/ml (range 31-38) ($P = .001$). For the HELLP Syndrome subgroup, median platelet count was 69,000/mm^3, and mean TPO level was 95 pg/ml. In addition, a linear correlation (Figure) was seen between platelet count and TPO level in the pre-eclamptic group ($R^2 = 0.74$). No linearity between platelet count and TPO level was demonstrated in the control group.

CONCLUSION: Thrombopoietin levels were elevated above control levels in pre-eclamptic patients. A linear correlation between degree of thrombocytopenia and TPO level was found in pre-eclamptic but not in healthy gravidas. TPO may serve as a useful marker for development of thrombocytopenia in pre-eclampsia.

Figure



34 **DO MEASURES OF INITIAL MATERNAL INJURY STATUS PREDICT FETAL/NEONATAL MORBIDITY AND MORTALITY IN CASES OF NONOBSTETRICAL TRAUMA?** THOMAS IVESTER[1], AMANDA HERRIN[2], KELLY BENNETT[2], RISA RAMSEY[2], MICHAEL SCHNEIDER[2], BILL MABIE[3], TERESA FLOWERS[2]; [1]University of Tennessee Health Sciences Center, Memphis, TN; [2]University of Tennessee Health Science Center, Obstetrics and Gynecology, Memphis, TN; [3]University of Tennessee Health Science Center, Obstetrics & Gynecology, Memphis, TN

OBJECTIVE: To examine fetal and neonatal outcomes among women admitted for nonobstetrical trauma. To determine if measures of maternal status could accurately predict outcome.

STUDY DESIGN: Data for this retrospective observational study were obtained through chart review of 7,101 patients evaluated or admitted for trauma between January 1st, 1998 and December 31, 2000. Patients were identified through a database of the national trauma registry based at the University of Tennessee Health Science Center. Charts were reviewed for perinatal outcome and measures of maternal status. Maternal measures included loss of consciousness, changes in neurological status, blood loss, vital signs, blood gases, and subjective symptoms. Adverse perinatal outcomes were defined as fetal/neonatal demise, preterm delivery, neurologic injury, and abnormal testing warranting delivery. Fisher's exact test was used to analyze the data. A P value of <.05 was considered statistically significant.

RESULTS: Two thousand and twenty-three (28.5%) female patients were identified. Of these, 84 (4.2%) were pregnant. A total of 10 patients (12%) suffered adverse perinatal outcomes. Thirty-two patients (38.5%) presented with complaints of abdominal pain, among whom 7 (22%) had an adverse outcome ($P = .040$: odds ratio [OR] = 4.5, 95% confidence interval [CI] (1.1-19). Eight patients required transfusion, with 3 (37.5%) suffering adverse outcomes ($P = .052$: odds ratio [OR] = 5.8, 95% CI 1.1-30). The remaining measures of maternal status (including subjective fetal movement, neurological changes, contractions, pH <7.4, pulse >100, and hypotension) did not approach statistical significance.

CONCLUSION: Certain aspects of the initial maternal assessment, particularly the requirement for transfusion and abdominal pain, may assist in predicting adverse perinatal outcomes and identifying those patients in need of more vigilant surveillance.