Grand Ball Room B, New Orleans Hilton Riverside

18 **DO CERVICAL FLUID CONCENTRATIONS OF ANTIBODIES MODULATE THE RISK OF PRETERM DELIVERY ASSOCIATED WITH CERVICAL LENGTH?** RODNEY EDWARDS[1], RONALD FERGUSON[1], SUSAN GENTRY[1], JONATHAN SHUSTER[2], PATRICK DUFF[1], [1]University of Florida, Obstetrics and Gynecology, Gainesville, FL [2]University of Florida, Statistics, Gainesville, FL

OBJECTIVE: To determine if measuring the concentration of antibodies in cervical fluid can further enhance the prediction of preterm delivery (PTD) associated with cervical length.

STUDY DESIGN: A prospective cohort study was conducted 9/01-3/03. Cervical fluid samples were obtained with preweighed cellulose wicks from women between 23 and 32 weeks' gestation with signs and symptoms of preterm labor and intact membranes. Concentrations of total IgA and IgG were determined by ELISA. A vaginal swab was obtained for Gram stain (Nugent) scoring for bacterial vaginosis (BV). In addition, cervical length was measured with vaginal ultrasound. Women who had received antibiotics within the past 2 weeks were not eligible. Logistic regression was utilized to evaluate the association of PTD with cervical length, IgA, IgG, and BV.

RESULTS: 137 patients were enrolled in the study; complete delivery information was available for 134. For this analysis, another 32 subjects were excluded due to visible staining of the cervical wick by blood. Therefore, 102 subjects were analyzed. For subjects delivering at term (n = 77) and preterm (n = 25), respectively, median IgA levels were 736 vs 638 μg/mL (P = .33) and median IgG levels were 1528 vs 1661 μg/mL (P = .85). For subjects with normal (n = 72), intermediate flora (n = 14), and BV (n = 16), respectively, median IgA levels were 693, 624, and 774 μg/mL (P = .90) and median IgG levels were 1422, 1553, and 2731 μg/mL (P = .02). However, in the logistic regression model, cervical length was the only factor that was significantly associated with PTD (P<.0001). When controlling for cervical length, none of the other variables (IgA, IgG, or Nugent score) were significantly prognostic for PTD (P = .74).

CONCLUSION: Our data confirm the value of cervical length in predicting risk of PTD. Measuring the concentrations of total IgA and IgG in the cervical fluid does not appear to enhance the predictive value of cervical length.

19 **PERINATAL EFFECT OF MAGNESIUM SULFATE ADMINISTERED FOR TOCOLYSIS** JOHN ELLIOTT[1], THOMAS GARITE[1], REESE CLARK[1], ANDREW COMBS[1], [1]Obstetrix Medical Group, Sunrise, FL

OBJECTIVE: Conflicting reports regarding the perinatal effects of $MgSO_4$, showing either increased or decreased serious neurologic morbidities, have created uncertainty regarding the safety of this drug when used for tocolysis.

STUDY DESIGN: A prospectively collected de-identified neonatal database generated from discharge summaries and progress notes of a national neonatology group (Pediatrix Medical Group) includes data from 164 NICUs between 1/97 and 5/03. Criteria for study inclusion: 24-32 weeks at delivery, no major congenital anomalies, no preeclampsia, and birthweight >400 g. We compared babies in 4 groups: $MgSO_4$ for tocolysis, terbutaline, combination of tocolytics, no tocolytics.

RESULTS: Of 161,686 neonates, 14,092 met inclusion criteria and had data coded regarding tocolytic administration. These included 6186 with $MgSO_4$ only, terbutaline 261, combination 1700, and no tocolytic 3596. The 4 groups were similar for newborn gender, gestational age at delivery (mean 29.3 wks) but fetuses exposed to tocolytics were more often white and given antenatal steroids and less often delivered by c-section. Multivariate analysis corrected for mode of delivery and exposure to antenatal steroids showed no difference in the compared neonatal morbidities among babies exposed to $MgSO_4$, other tocolytics, or none.

CONCLUSION: This large retrospective study corrected for other important confounders including antenatal steroids, route of delivery, and eliminating $MgSO_4$ given for preeclampsia was unable to demonstrate any differences in major neonatal morbidities in babies exposed to $MgSO_4$.

Tocolysis

	None	MgSO4	Terbutaline	Multiple
Neonatal Mortality	7.3%	7.2%	5.7%	5.6%
IVH	4.4%	5.7%	3.5%	4.8%
NEC	4.8%	4.3%	3.4%	4.1%
ROP	3.2%	5.2%	3.6%	5.1%
No Severe Morbidity	71.9%	70.0%	72.8%	70.4%

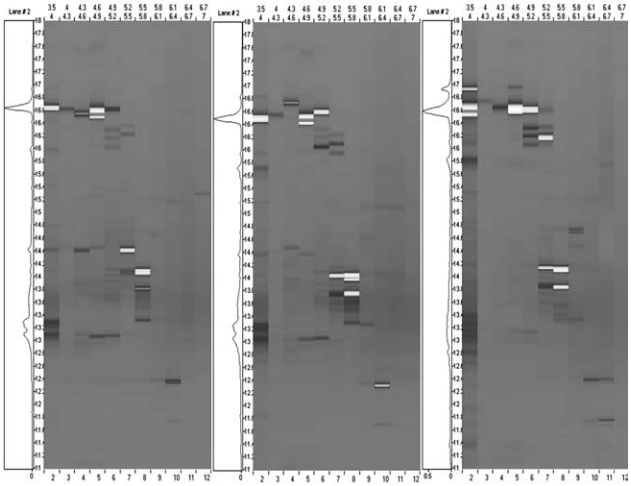
20 **PROTEOMIC PROFILING OF PREMATURE LABOR: A METHOD TO IDENTIFY CLINICAL BIOMARKERS AND MECHANISMS OF DISEASE** ROBERTO ROMERO[1], TINNAKORN CHAIWORAPONGSA[1], RICARDO GOMEZ[1], YEON MEE KIM[1], SAMUEL EDWIN[1], EMMANUEL BUJOLD[2], BO YOON[3], [1]Perinatology Research Branch, NICHD/NIH/DHHS, Detroit, MI [2]Wayne State University, Obstetrics and Gynecology, Detroit, MI [3]Seoul National University, Seoul, South Korea

OBJECTIVE: Simultaneous analysis of the protein composition of biological fluids is now possible (proteomics). Such an approach can be used to identify biological markers of disease and to understand the pathophysiology of disorders that have eluded classification, diagnosis, and treatment. The purpose of this study was to analyze the differences in protein composition in amniotic fluid of patients in premature labor.

STUDY DESIGN: Amniotic fluid was obtained by amniocenteses from three groups: (1) patients with premature labor and intact membranes who subsequently delivered at term (n = 86); (2) patients with preterm labor in the absence of inflammation who delivered preterm (n = 86); (3) patients with intraamniotic inflammation defined as an elevation of amniotic fluid IL-6 (n = 86). Two-dimensional (2D) chromatography was used for analysis (the first dimension separated proteins by isoelectric point, and the second, by protein hydrophobicity). A 2D protein map was generated using software that displays the isoelectric point and the degree of hydrophobicity. The maps were used as pattern recognition tools to discern unique combinations of proteins expressed in plasma.

RESULTS: The following three partial 2D protein maps represent the differential amniotic fluid proteome of patients in preterm labor who delivered at term (#1), those in preterm labor who delivered preterm without intraamniotic inflammation (#2), and those with intraamniotic inflammation (#3). Figure compressed per requirements and available for review/publication upon request.

CONCLUSION: Proteomic analysis of amniotic fluid revealed unique differential expression of proteins in three subsets of preterm labor. This novel approach can be used for the identification of biomarkers and to improve the understanding of the mechanisms of disease in preterm parturition.



21 **POSTNATAL THERAPY TO PREVENT ALCOHOL-INDUCED LEARNING ABNORMALITIES IN FETAL ALCOHOL SYNDROME** CATHERINE SPONG[1], LORRAINE WOOD[1], SARAH POGGI[2], DANIEL ABEBE[1], [1]SDMP, LDN, NICHD, NIH, Bethesda, MD [2]Georgetown University, Obstetrics and Gynecology, Washington, DC

OBJECTIVE: Fetal alcohol syndrome (FAS) is the most common non-genetic cause of mental retardation. Previous studies have demonstrated that novel peptide therapies administered prenatally prevent alcohol-induced damage, including fetal death, growth abnormalities, and learning deficits (as shown in the Watermaze and T maze) in adult offspring. Since the majority of pregnant women do not admit to alcohol consumption during pregnancy, prenatal therapy is of limited value. The objective of this study was to evaluate if therapy administered postnatally would prevent alcohol-induced learning deficits.

STUDY DESIGN: C57Bl6/J mice were treated with alcohol (12 litters) or placebo (8 litters) on gestational day 8 per the Webster model for FAS. After delivery, animals were weaned at 20 days and male offspring were ear-tagged. On day 40, males were fasted for 1 hour and in utero alcohol-exposed animals were treated via gavage with peptides (D-NAPVSIPQ + D-SALLRSIPA, n = 14) or placebo (n = 13) and control offspring were treated with placebo (n = 21) daily. Learning was evaluated (twice daily over two 7-day periods) with the Morris Watermaze and T-Maze Continuous Alternation Task by a single investigator, blinded to prenatal and postnatal treatment, under standard conditions.

RESULTS: In the Morris Watermaze, the control litters learned, decreasing their latency (sec) over 50% (56.9 ± 7.4 day 1 to 16.7 ± 13.5 day 7, P<0.001). Males from the in utero alcohol-exposed litters who received postnatal peptides also significantly learned, with a learning curve not different than that of control at all time points tested (all P > 0.5). In the T-Maze, in utero alcohol-exposed males treated with peptides had the highest exploratory behavior (sec), an important component of learning, (alcohol 891 ± 216, placebo 803 ± 210, alcohol + peptides 1028 ± 386, P = 0.05).

CONCLUSION: If confirmed, identification of a successful postnatal therapy, such as these novel peptides, would significantly facilitate therapeutic interventions for FAS.