

576 DETERMINANTS OF INTACT SURVIVAL IN EARLY-ONSET IUGR DELIVERED <32 WEEKS AHMET BASCHAT¹, HENRY GALAN², AMAR-NATH BHIDE³, CHRISTOPH BERG⁴, BASKARAN THILAGANATHAN³, MICHELLE KUSH¹, DICK OEPKES⁵, ULRICH GEMBRUCH⁴, CARL WEINER⁶, CHRISTOPHER HARMAN¹, ¹University of Maryland at Baltimore, Obstetrics, Gynecology and Reproductive Sciences, Baltimore, MD ²University of Colorado Health Sciences Center, Obstetrics and Gynecology, Denver, CO ³St. George's Hospital Medical School, Fetal Medicine Unit, London, United Kingdom ⁴Friedrich Wilhelm University, Obstetrics & Prenatal Medicine, Bonn, Germany ⁵University Hospital Leiden, Obstetrics & Gynecology, Leiden, Netherlands ⁶University of Maryland at Baltimore, Obstetrics, Gynecology & Repro Sciences, Baltimore, MD

OBJECTIVE: To quantify the rate and determinants of intact survival in IUGR offspring delivered <32 weeks.

STUDY DESIGN: This a multicenter study evaluated IUGR fetuses (accurate gestational dating, BW <10th centile, elevated umbilical artery Doppler index). Stillbirth and major neonatal complications (MNC) (>grade 2 IVH, BPD, NEC, circulatory insufficiency, neonatal death) were recorded and related to multiple variables (arterial and venous Doppler, biophysical profile, gestational age [GA], BW, maternal condition) using chi-square and logistic regression.

RESULTS: Among 159 pregnancies, there were 20 stillbirths (12.6%). At delivery, 45 were academic (28.3%), 74 had MNC (46.5%), and 22 died post partum (13.8%). Ninety-six (60.4%) survived intact without any of the above complications. Intact survival rose with GA. Main determinants of intact survival were GA ($r^2 = 0.54$, $P < 0.001$), acid base status at birth ($r^2 = 0.44$), BW ($r^2 = 0.57$, both $P < 0.001$), biophysical profile score <6 ($r^2 = 0.17$, $P < 0.05$), and ductus venosus Doppler index elevation ($r^2 = 0.46$, $P < 0.02$).

CONCLUSION: The GA at delivery coupled with the degree of fetal cardiovascular and metabolic deterioration are the major determinants of intact survival in preterm IUGR, stressing the importance of accurate fetal status assessment using multiple modalities including arterial and venous Doppler analyses.

577 FETAL GROWTH POTENTIAL IN HIV-POSITIVE PATIENTS AHMET BASCHAT¹, RADEK BUKOWSKI², MICHELLE KUSH¹, JAN KRIEBS³, CHRISTOPHER HARMAN¹, ¹University of Maryland at Baltimore, Obstetrics, Gynecology and Reproductive Sciences, Baltimore, MD ²University of Texas Medical Branch at Galveston, Obstetrics and Gynecology, Galveston, TX ³University of Maryland at Baltimore, Obstetrics, Gynecology & Repro Sciences, Baltimore, MD

OBJECTIVE: To compare measures and determinants of impaired fetal growth in HIV-positive women using individualized fetal growth potential (GP) and traditional population-based birthweight (BW) percentiles.

STUDY DESIGN: Ninety-one HIV-positive patients had regular surveillance of viral load (VL) and CD4 count as part of their prenatal care. Multivariate prediction of individualized GP used maternal race, gravidity, height, and prepregnancy weight. This predicted a normal distribution of BW for that mother. Actual birthweight was assigned two different percentiles, based on (1) sea level norms for gestational age, gender, and race; and (2) birthweight norms predicted by GP. Impaired fetal growth was defined as <10th %ile by either method. Impaired fetal growth was related to maternal and disease factors using chi square and bivariate analysis.

RESULTS: Impaired fetal growth was determined by GP in 25 (27.5%) babies and by BW percentile in 22 (24.2%). However, only 17 were identified by both methods (chi square $P < 0.001$ for different distributions). GP identified 8 babies who were much smaller than predicted by prenatal factors, while 5 babies below traditional BW percentiles were born to small, thin women (who might be expected to have such small babies). BW and GP percentiles both correlated with maternal weight gain (Pearson's 0.29, $P < 0.001$). Only GP showed a correlation with VL (Pearson's coeff. 0.27, $P < 0.001$).

CONCLUSION: Individual fetal growth potential identifies a unique subset of SGA neonates in HIV-positive patients that is missed using population-based reference curves. The GP may be superior to simple BW in studying impacts of maternal HIV status on growth. As it has shown superior prediction of neonatal development, GP should form the primary tool of assessing fetal growth in these high-risk patients.

578 IS DIGOXIN THE DRUG OF CHOICE FOR SUPRAVENTRICULAR TACHYCARDIA ASSOCIATED WITH SEVERE HYDROPS FETALIS? GILAD RATTAN¹, JESSICA ASCHER-LANDSBERG¹, ARIEL MANY¹, JOSEPH B. LESSING¹, SHMUEL DIAMANT², MICHAEL J. KUPFERMINTZ¹, ¹Lis Maternity Hospital, Tel Aviv Medical Center, Tel Aviv University, Obstetrics & Gynecology, Tel Aviv, Israel ²Tel Aviv Medical Center, Tel Aviv University, Pediatric Cardiology, Tel Aviv, Israel

OBJECTIVE: Fetal supraventricular tachycardia (SVT) leading to severe fetal hydrops is an extremely rare condition and potentially fatal. Digoxin is often mentioned as the drug of choice for this condition, whereas flecainide has mostly been utilized as second-line agent. We describe 6 cases of SVT associated with severe hydrops fetalis.

STUDY DESIGN: We treated 6 women with fetal SVT and severe hydrops between 1997 and 2003. Gestational ages were 22, 23, 25, 24, 32, and 28 weeks. Diagnosis of SVT was made by echocardiography performed by a pediatric cardiologist, and structural cardiac anomalies were excluded. In all 6 fetuses ascites, pleural effusion, and generalized edema were observed. In 4 cases, digoxin in a loading dose, followed by a maintenance dose, was administered, achieving maternal serum therapeutic levels. In 2 cases flecainide was started as first-line agent.

RESULTS: In the 4 cases in which digoxin was used as first-line agent, stabilization of fetal heart rate (FHR) did not occur and resolution of hydrops was not observed, although maternal therapeutic levels were achieved and expectancy period of at least 5 half-lives elapsed. Therapy was switched to flecainide, and in all four cases normalization of FHR occurred within 5-7 days. Hydrops resolved in all 4 cases within 2-4 weeks. All delivered normal neonates at term with normal cardiac rhythm. In 2 subsequent patients flecainide was used as first-line agent. Normalization of FHR was observed on the sixth day of therapy, followed by resolution of fetal hydrops. Maternal side effects were not observed with either drug.

CONCLUSION: Although in a small series, dictated by the rarity of the clinical condition, our results indicate that in cases of fetal SVT associated with severe hydrops, flecainide rather than digoxin may be used as the drug of choice.

579 THE BENEFIT OF CESAREAN DELIVERY WITHOUT LABOR FOR INFANTS WITH ANTENATALLY DIAGNOSED GASTROSCHISIS EVA PRESSMAN¹, CATHLEEN CALLAHAN¹, JOHN-CHRISTOPHER GLANTZ¹, ¹University of Rochester, Obstetrics and Gynecology, Rochester, NY

OBJECTIVE: To evaluate the effects of labor and mode of delivery on outcomes in neonates with gastroschisis.

STUDY DESIGN: Infants antenatally diagnosed with gastroschisis born between January 1993 and December 2002 were divided into three study groups: (1) CD without labor, (2) CD after labor, and (3) vaginal delivery. Data were collected on gestational age, birthweight, Apgar scores, meconium, and interval to first corrective surgery. Measured outcomes included primary closure, days to enteral feeding, sepsis, length of antibiotic therapy, and length of NICU stay. Kruskal-Wallis and Mann-Whitney tests were used to determine differences between the study groups. Power analysis was performed to determine adequacy of sample size.

RESULTS: Thirty-one infants with antenatally diagnosed gastroschisis were identified: 9 in group 1, 7 in group 2, and 15 in group 3. No differences were noted between groups 2 and 3. Evaluating group 1 and the combination of groups 2 and 3, infants delivered by CD without labor had shorter intervals to first corrective surgery (51 vs 125 minutes, $P = 0.01$) and a lower incidence of meconium-stained fluid (22% vs 82%, $P = 0.002$). Infants in group 1 had more rapid initiation of enteral feeds (14 vs 32 days, $P = 0.04$) and fewer days of antibiotic therapy (4 vs 14 days, $P = 0.02$). No differences were identified in the other variables or outcomes. Post hoc power analysis indicated sufficient power to negate the effect of labor on primary closure but insufficient power to determine the effect on length of NICU stay or incidence of sepsis.

CONCLUSION: Labor is associated with increased morbidity in infants with prenatally diagnosed gastroschisis. Additional patients and further analysis are needed to determine if this is due to the process of labor or the timing of neonatal surgical repair following unscheduled deliveries.