118 GENETIC BACKGROUND IMPACTS ON MYOMETRIAL WOUND HEALING POST-CESAREAN DELIVERY (CD): A MRL/MPJ+/+ MOUSE MODEL OF UTERINE SCARRING CATALIN S. BUHIMSCHI[1], JOSEPH A. MADRI[2], NICOLETA SORA[1], GUOMAO ZHAO[1], IRINA A. BUHIMSCHI[1], [1]Yale University, Ob/Gyn & Reprod Sci, New Haven, Connecticut, [2]Yale University, Pathology, New Haven, Connecticut

OBJECTIVE: Little is known about myometrial healing following CD. We investigated myometrial wound repair using 2 strains of mice [MRL/MpJ+/+ (MRL: "high-healer" phenotype) and C57BL/6 (C57: "low-healer" phenotype)] that differ significantly in their genotype and wound healing characteristics.

STUDY DESIGN: MRL (n=18) and C57 (n=19) pregnant mice received BrdU in drinking water from day (d) 16 (term d19) of pregnancy. CD was performed on d17 by standardized technique. Ear punches were performed to confirm differences in healing phenotype. Mice were sacrificed at 3, 5, 15 & 60d post-CD (4-5 mice/d/strain). H&E and Sirus red were used for histological examination of the scar (wound integration, inflammation and collagen birefringence). Dividing cells were labeled using anti-BrdU antibody and a mitotic index was calculated. Stress-strain curves for scarred tissue were generated and analyzed for biomechanical parameters such as stiffness, elasticity and tissue strength.

RESULTS: 1) 60d post-surgery the ears of MRL mice healed completely without scarring (regeneration) while C57 mice maintained an open ear-hole; **2)** Uterine wound granulation tissue was identified 3d post-CD in both strains but less in the MRL strain; **3)** No scar could be macroscopically identified in either MRL or C57 mice 60d post-CD; **4)** Significant histological differences in wound integration, inflammation and collagen birefringence were observed between the phenotypes; **5)** Uterine mitotic activity commenced and ended earlier in MRL compared to C57 mice; **6)** C57 uteri had increased stiffness and less elasticity compared to MRL at d15 & d60 post-CD.

CONCLUSION: This study provides a better understanding of myometrial wound healing after CD. The differences in regenerative ability of MRL and C57 mice suggest that uterine healing and functional behavior of the uterine scar is genotype dependent.

0002-9378/$ - see front matter
doi:10.1016/j.ajog.2008.09.145

119 NULLIPARITY, ART AND TWINS: A TIME FOR RE-THINKING ANAT HERSHKO-KLEMENT[1], ARIE BERKOVITZ[2], MOSHE FEJGIN[3], [1]Meir Medical Center, Ob -Gyne, Kfar-Saba, Israel, [2]Meir Medical Center, Ob-Gyne, Kfar Saba, Israel, [3]Meir Medical Center, Ob-Gyne, Kfar-saba, Israel

OBJECTIVE: During the last decades, mainly due to assisted reproductive techniques (ART) we are facing an increase in the rate of twin pregnancy. Twin pregnancies are well established high risk pregnancies, carrying a substantial medical and economical burden; the most substantial factors are clearly prematurity and low birth weight. Our goal was to evaluate the risk that nulliparity poses to the outcome of twin pregnancies.

STUDY DESIGN: We prospectively enrolled into the study a cohort of twin pregnancies achieved following ART, after completing the first trimester. The patients were treated in a single outpatient fertility center between 1/1/2004 and 31/07/2008. Pregnancies achieved by egg donation were excluded. Outcome measures were: second trimester abortion, length of hospitalization during the pregnancy, gestational age at delivery, birth weight and the number of liveborns

RESULTS: The results of 244 twin pregnancies (2/3 nulliparas) were available for evaluation. Second trimester miscarriage rate was 9.3% in nulliparas and only 2.4% in multiparas (P value= 0.061). Gestational age at the day of delivery was more advanced in multiparas with a significant difference in the proportion of deliveries occurring at or prior to 32 weeks: 15.1% in nulliparas as compared to 2.5% in multiparas (P value=0.03). Better outcome of multiparas was also demonstrated by the calculated chance of taking home at least one baby in a twin pregnancy: 97.6% for multiparas as compared to only 89.2% in nulliparas (P value 0.024). Using a multivariate logistic regression analysis and adjustment for age, treatment modality and fetal reduction procedure, parity remained the only contributing variable.

CONCLUSION: Nulliparity is a risk factor for a poor outcome in twin pregnancies, associated with an increased risk for both second trimester abortions and a significant prematurity. This information should be discussed with the couple as part of the decision process related to the number of embryos to be transferred.

0002-9378/$ - see front matter
doi:10.1016/j.ajog.2008.09.146

120 PRENATAL, PERI-NATAL, AND NEONATAL RISK FACTORS FOR AUTISM IN CALIFORNIA, 1991-2001 WILLIAM GILBERT[1], CAREY MORENO-HUNT[2], SHANEE PORTER[2], GUIBO XING[2], BEATE DANIELSEN[3], LLOYD SMITH[2], [1]Sutter Medical Center Sacramento, Sacramento, California, [2]University of California, Davis, Sacramento, California, [3]Health Information Solutions, Rocklin, California

OBJECTIVE: Examine prenatal, peri-natal, and neonatal risk factors on the incidence of autism.

STUDY DESIGN: Retrospective cohort population based study. Records of children with autism spectrum disorders (ASD) from the California Department of Developmental Services were linked with their hospital birth records from 1991-2001 and were examined for demographics, obstetric and neonatal outcomes and compared to all children without ASD born during the same period.

RESULTS: 20,206 children with ASD were identified and their records examined and compared to those children without ASD. Demographic factors including advancing maternal age OR 2.0 (95% CI 1.9, 2.1) 35-40 years as compared to 21-25 years, advanced level of education OR 1.9 (1.8, 2.0) college vs < high school, nulliparity OR 2.0 (1.9, 2.2) compared to para 3 or more, and race other than white OR 1.3 (1.22, 1.37) for African American vs. White, were all associated with increased risk of ASD. Maternal diabetes had a slight increase risk OR 1.13 (1.05-1.21) for gestational diabetes, and OR 1.30 (1.10-1.53) with pre-existing diabetes. Birth weight (besides infants >4000gm OR 1.25 (1.20, 1.30)) did not impact incidence of ASD, but being male did with OR 4.62 (4.45-4.80). Adverse obstetric events (birth asphyxia, fetal distress, birth trauma, prematurity, mode of delivery) did not increase the risk of developing ASD. With the exception of IVH OR 1.46 (1.12, 1.9), complications in the newborn period (RDS, necrotizing enterocolitis, IUGR) were likewise not associated with an increased risk of ASD.

CONCLUSION: Clearly, the vast majority of adverse obstetrical and neonatal outcomes were not associated with an increased risk of having a child who subsequently develops ASD. Certain demographic factors, on the other hand, were highly associated with ASD and areas of research should focus in these areas.

0002-9378/$ - see front matter
doi:10.1016/j.ajog.2008.09.147

121 MINIMAL QUANTITATIVE LEVELS OF FETAL FIBRONECTIN (1-49 NG/ML) AT 24-27 WEEKS ARE ASSOCIATED WITH AN INCREASED RISK OF RECURRENT PRETERM DELIVERY IN ASYMPTOMATIC PATIENTS WITH PRIOR PRETERM BIRTH JAMES KURTZMAN[1], MANJU CHANDIRAMANI[2], ANNETTE BRILEY[2], LUCILLA POSTON[2], ANDREW SHENNAN[2], [1]Pediatrix Medical Group, Laguna Hills, California, [2]King's College London, London, United Kingdom, United Kingdom

OBJECTIVE: To determine whether minimal quantitative levels of vaginal fetal fibronectin (fFN 1-49 ng/mL) at 24-27 weeks gestational age (GA) are associated with an increased risk of recurrent preterm delivery (PTD) in asymptomatic high risk patients (pts).

STUDY DESIGN: We performed a secondary analysis of a prospectively collected data set (PREMET study, Shennan et al, BJOG, 2005) in which 900 high risk asymptomatic pts with singletons underwent quantitative fFN screening at 24 and 27 wks. 53 pts randomized to antibiotic intervention were excluded as were pts whose delivery information was incomplete. As > 80% of the remaining pts had a previous PTD, those without prior PTD were excluded. The remaining 571 pts who underwent a 24 wk fFN screen were analyzed as were the 459 pts who underwent a 27 week fFN screen. Pts with indicated PTDs were excluded from the spontaneous PTD rate at that GA. All fFN tests were quantitative.

RESULTS: At 24 wks, 88% of patients had vaginal fFN levels of 0 (undetectable). Analysis of PTD rates at 32-37 wks generated 4 distinct 24-27 wk fFN screen cluster groups: fFN 0, 1-49, 50-199, and > 200. While a progressively increased risk of PTD was noted with incrementally increased fFN, this portion of the analysis focused on the fFN 0 and fFN 1-49 ng/mL groups (> 90% of the pts). Patients with minimally detectable fFN (1-49 ng/mL) at 24 wks or 27 wks had a significant increased risk of PTD < 34 wks, < 35 wks, and < 36 wks compared to the fFN 0 group. For example, at < 35 wks, the rates of PTD were 7.9% (fFN 0) vs. 17.5% (fFN 1-49), RR 2.2 (1.1-4.6, p=.03). Similar trends in PTD rates were seen between the 2 groups based on fFN collections at 27 weeks' GA.

CONCLUSION: In asymptomatic patients with a prior PTD, minimally detectable fFN levels at 24-27 wks (1-49 ng/mL) are associated with increased risk of PTD < 34, 35, and 36 wks. As these patients would have been otherwise classified as having a negative fFN screen (<50 ng/mL), these data suggest that a quantitative fFN may provide additional information not derived from a standard qualitative screen.

0002-9378/$ - see front matter
doi:10.1016/j.ajog.2008.09.148