158 PROGESTATIONAL AGENTS AND PRETERM BIRTH: WHAT ABOUT THE FETUS? MICHAL ELOVITZ[1], JINHUA CHAI[2], ELLA OFORI[2], IRINA BURD[3], [1]University of Pennsylvania, OBGYN; Maternal and Child Health Research Program, Philadelphia, Pennsylvania, [2]University of Pennsylvania, OBGYN; Maternal and Child Health Research Program, Pennsylvania, [3]OBGYN; Maternal and Child Health Research Program, Pennsylvania

OBJECTIVE: Progestational agents (PA) have been demonstrated to decrease risk of preterm birth (PTB) in patients with prior PTB. Active trials are investigating the use of PAs for women with active preterm labor (PTL). As inflammation is present in many cases of spontaneous PTB, it is plausible that in many women with active PTL that sub-clinical infection or inflammation is present in the uterus. These studies sought to determine if PA treatment affected inflammatory pathways in the amniotic fluid and fetal brain in a mouse model of PTB.

STUDY DESIGN: CD-1 mice on E15 were randomized to the following treatment groups (n=6-15/group). 1) Intrauterine infusion of saline 2) Intrauterine infusion of lipopolysaccharide (LPS) or 3) medroxyprogesterone acetate (MPA) (1mg/dam) one hour prior to intrauterine LPS. Maternal serum (MS), amniotic fluid (AF), and fetal brains were collected 6 hrs after treatment. LAL assay was performed to assess the amount of LPS in MS and AF. Inflammatory mediators were assessed by ELISA in AF. Cytokine mRNA expression was determined by QPCR in fetal brains.

RESULTS: At 6 hrs, LPS was present in MS and AF of dams exposed to intrauterine LPS and LPS+MPA but not in saline exposed. However, In LPS+MPA exposed dams, LPS levels in AF were not significantly different from saline. CxCL10 levels were elevated in the AF of LPS-exposed fetuses and further elevated in the AF of LPS-MPA exposed fetuses (P=0.01). IL-1b, IL-6 and IL-10 mRNA were significantly increased 25x, 9.4 x and 1.9 x in LPS-exposed fetal brains. Pretreatment with MPA, decreased but did not prevent the up-regulation of IL-1b and IL-6 in the fetal brains.

CONCLUSION: MPA appears to limit intrauterine LPS from reaching the amniotic cavity. While MPA limits the cytokine response in the fetal brain, there is still a potent inflammatory response compared to controls. As human studies to investigate this research question are problematic, information from this animal model suggests caution in the use of PAs in patients that may be at risk for sub-clinical intrauterine infection or inflammation.

0002-9378/$ - see front matter
doi:10.1016/j.ajog.2008.09.185

159 CESAREAN DELIVERY ON MATERNAL REQUEST VERSUS PLANNED VAGINAL DELIVERY: A DECISION ANALYSIS TO IDENTIFY IMPORTANT OUTCOMES AND TO PRIORITIZE FUTURE RESEARCH DIRECTIONS JENNIFER WU[1], ANTHONY VISCO[1], AARON CAUGHEY[2], EVAN MYERS[1], [1]Duke University, Durham, North Carolina, [2]University of California, San Francisco, San Francisco, California

OBJECTIVE: To estimate the risks of maternal and neonatal outcomes after cesarean delivery on maternal request (CDMR) versus planned vaginal delivery using a decision model and to prioritize future research by identifying factors with a significant impact on outcomes.

STUDY DESIGN: A decision analytic model was developed using TreeAge Pro software to simulate a cohort of healthy, primiparous women with term, singleton pregnancies deciding between 1) CDMR and 2) planned vaginal delivery. We assessed known maternal and neonatal short-term and long-terms risks based on an Agency for Healthcare Research and Quality (AHRQ)-sponsored systematic evidence review. Sensitivity analyses were performed to ascertain which clinical factors had the greatest impact on outcomes.

RESULTS: In our base-case analysis, CDMR had a higher risk of intraoperative complications (1.7% vs 0.5%) and major peripartum infection (2.9% vs 1.7%). However, CDMR had a lower risk of anal incontinence (3.8% vs 7.9%) and urinary incontinence (5.2% vs 20.6%) at 6 months postpartum. For neonatal outcomes, CDMR had a higher risk of transient tachypnea of the newborn (TTN) (3.1% vs 1.8%) and mechanical ventilation (0.7% vs 0.4%). The following outcomes were rare (< 0.5%): maternal and neonatal mortality, anesthetic complications, transfusion, hysterectomy, thromboembolism, brachial plexus injury, cerebral hemorrhage, encephalopathy and seizures. In one-way sensitivity analyses, the factors that had the greatest impact on the model were the incidence of anal and urinary incontinence, TTN, neonatal respiratory distress and mechanical ventilation.

CONCLUSION: When comparing CDMR to planned vaginal delivery, future research endeavors should assess differences in comprehensive maternal outcomes, including long-term pelvic floor disorders, and short-term neonatal outcomes, especially respiratory morbidity.

0002-9378/$ - see front matter
doi:10.1016/j.ajog.2008.09.186

160 MATERNAL ANTENATAL CHARACTERISTICS AND THE RISK OF WHITE MATTER DAMAGE AND CEREBRAL PALSY THOMAS MCELRATH[1], ELIZABETH N. ALLRED[2], KIM BOGGESS[3], KARL KUBAN[4], ALAN LEVITON[5], [1]Brigham & Women's Hospital, Maternal-Fetal Medicine, Boston, Massachusetts, [2]Children's Hospital of Boston, Neuroepidemiology Unit, Boston, Massachusetts, [3]University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, [4]Boston Medical Center, Pediatric Neurology, Boston, Massachusetts, [5]Children's Hospital of Boston, Harvard Medical School, Neuroepidemiology Division, Boston, Massachusetts

OBJECTIVE: Few studies have attempted to examine the antenatal antecedents to both ultrasonically evident neonatal brain damage and the ultimate risk of cerebral palsy in the same cohort. In a cohort of infants born before the 28th week, we evaluated maternal and pregnancy characteristics associated with brain ultrasound abnormalities and the later development of cerebral palsy.

STUDY DESIGN: Maternal interviews and chart reviews were conducted among 1,445 infants born at 14 tertiary centers. Protocol neonatal brain ultrasounds were obtained for the occurrence of ventriculomegaly (VM) and white matter echolucent lesions (EL). Two year follow-up neurologic exams were performed.

RESULTS: Exposure to partial or complete steroid course was associated with lower risk for VM and EL (adj OR [95% CI] 2.3 [1.5-4.2] & 1.7 [1.2-3.4] respectively). Complete and partial courses had the same benefit. Deliveries for PROM, cervical insufficiency, or preterm labor were at increased risk for VM compared to those delivered for preeclampsia (adj OR [95% CI] 2.3 [1.1-4.9], 3.6 [1.5-8.7], 2.8 [1.4-5.5] respectively). Delivery for labor and IUGR increased risk for EL (adj OR [95% CI] 2.7 [1.2-5.7] & 3.3 [1.2-9.4] respectively). Risk for early WMD and later CP increased significantly with decreasing week of GA at delivery. Latency between ROM and delivery did not increase risk of WMD or CP. Neither the risk of diparesis associated with preterm labor and pPROM nor the risk of quadriparesis and diparesis associated with cervical insufficiency achieved significance.

CONCLUSION: We observe that multiple antenatal phenomena contribute to the occurrence of brain abnormalities among infants born remote from term. These influences are less clearly related to the ultimate development of cerebral palsy. This observation suggests that, unlike the risk of white matter damage, the antenatal period is less associated with risk of cerebral palsy than may have previously been appreciated.

0002-9378/$ - see front matter
doi:10.1016/j.ajog.2008.09.187

161 INFECTIONS IN PREGNANCY: SYNERGISTIC EFFECT ON SPONTANEOUS PRETERM DELIVERY (SPTD) RISK? KATHERINE KURNIT[1], ALISON CAHILL[1], MARJORIE JEFFCOAT[2], SAMUEL PARRY[3], MARY SAMMEL[4], DEBORAH NELSON[3], BONNIE CLOTHIER[5], DAVID STAMILIO[1], JEROME STRAUSS, III[6], ARNOLD COHEN[7], JACK LUDMIR[3], GEORGE MACONES[1], [1]Washington University in St. Louis, St. Louis, Missouri, [2]University of Pennsylvania, Dentistry, Philadelphia, Pennsylvania, [3]University of Pennsylvania, Philadelphia, Pennsylvania, [4]University of Pennsylvania, Biostatistics, Philadelphia, PA, [5]University of Pennsylvania, Pennsylvania, [6]University of Pennsylvania Health System, Center for Research on Reproduction and Women's Health, Philadelphia, PA, [7]Albert Einstein Medical Center, Philadelphia, Pennsylvania

OBJECTIVE: Periodontal disease, bacterial vaginosis (BV), and sexually transmitted infections have been found to be associated with an increased risk of preterm delivery. The study's aim was to determine whether the interaction of two infections during pregnancy further magnifies the risk of SPTD.

STUDY DESIGN: A planned secondary analysis of a multicenter randomized clinical trial of treating periodontal disease in pregnancy. Periodontal disease status was determined in all subjects by dental hygienists. Cervicovaginal swabs were obtained at enrollment and scored for BV using Nugent's criteria. Presence of other infections (Chlamydia, Trichomoniasis, urinary tract infections) during pregnancy was determined by review of the outpatient record by trained research nurses, and gestational age at delivery was obtained for 1470 women. We assessed whether the effect of multiple infections was additive or exponential on SPTD risk using stratified analysis and logistic regression to test for effect modification. Primary outcome was SPTD before 37 and 35 weeks.

RESULTS: Of the 1470 women, 67% had periodontal disease, 55% had BV at enrollment, 10% had Chlamydia, 11% had Trichomoniasis, and 23% had a UTI. The presence of a second infection did not modify the effect of the first infection on risk of SPTD. While some interactions suggested a moderately increased risk of SPTD, none were statistically significant (Table).

Interaction	Interaction OR (C.I.) < 35 weeks	p-value	Interaction OR (C.I.) < 37 weeks	p-value
PD*BV	1.26 (0.47-3.38)	0.64	1.06 (0.52-2.19)	0.87
PD*Chlamydia	1.58 (0.34-7.24)	0.56	2.71 (0.79-9.36)	0.11
PD*Trich	1.92 (0.20-18.76)	0.57	1.51 (0.37-6.07)	0.56
PD*UTI	1.41 (0.47-4.24)	0.54	1.45 (0.62-3.40)	0.40
BV*Chlamydia	0.86 (0.19-3.95)	0.85	0.95 (0.29-3.07)	0.93
BV*Trich	0.99 (0.15-6.53)	0.99	2.27 (0.57-9.06)	0.25
BV*UTI	0.96 (0.34-2.73)	0.94	0.94 (0.42-2.10)	0.88

CONCLUSION: The interaction between two infections does not further increase the risk of SPTD. However, screening for infection during pregnancy should still be completed as the presence of infection has been associated with increased risk of preterm delivery and other adverse outcomes.

0002-9378/$ - see front matter
doi:10.1016/j.ajog.2008.09.188