511 UNDERLYING INTERLEUKIN-6 LEVELS IDENTIFY WOMEN DESTINED TO DEVELOP INTRAPARTUM FEVER AFTER EPIDURAL ANALGESIA LAURA GOETZL[1], JOSE RIVERS[2], ISRAEL ZIGHELBOIM[1], MARY ANN MASTRANGELO[3], DAVID J TWEARDY[3], MAYA S SURESH[2], [1]Baylor College of Medicine, Obstetrics & Gynecology, Houston, TX [2]Baylor College of Medicine, Anesthesiology, Houston, TX [3]Baylor College of Medicine, Medicine, Houston, TX

OBJECTIVE: To elucidate the non-infectious inflammatory etiology of epidural fever.

STUDY DESIGN: We enrolled a prospective cohort of afebrile (<99.5°F) nulliparas with epidural analgesia, obtaining maternal serum at initiation of epidural analgesia and monitoring maternal core temperatures hourly (n = 71). Students t-test was used as appropriate.

RESULTS: In this low-risk cohort, the rate of intrapartum fever >100.4°F was 24%. Pre-epidural maternal IL-6 levels were significantly higher in women who later developed a fever (26.1 ± 4.4 vs. 88.9 ± 21.8 pg/mL, p = .01). The majority of women had no temperature response to epidural analgesia (Figure 1). However, the subset of women who later develop epidural fever manifest temperature changes too soon to be explained by chorioamnionitis.

CONCLUSION: We report the novel finding that only a subset of nulliparous women respond to epidural with hyperthermia, and that this response is not associated with clinical signs of underlying infection. However, there exists antecedant maternal inflammation, as shown by elevated IL-6, prior to epidural placement. Our findings do not support the two previous hypotheses for epidural fever: 1) acquired infection and 2) pertubations of maternal thermoregulation. Elucidating the inflammatory mechanism of epidural fever is critical in designing targeted interventions.

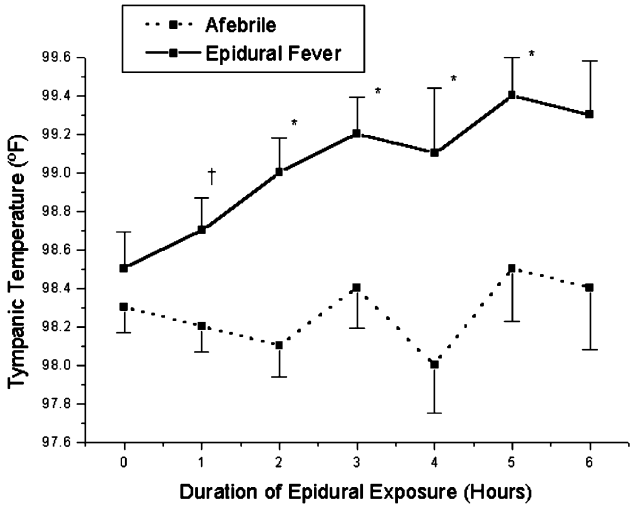

Figure 1: Maternal temperature curves after epidural analgesia. (†, p = 0.09; *, p < 0.05)

512 ATOSIBAN TREATMENT FOR UTERINE HYPERACTIVITY DURING ACTIVE LABOR SAMUEL LURIE[1], OSCAR SADAN[2], ZAHI BEN AROYA[1], MAREK GLEZERMAN[1], [1]Edith Wolfson Medical Center, Holon, Israel, Obstetrics & Gynecology, Holon, Israel [2]Sackler University, Holon, Israel

OBJECTIVE: To assess the ability of Atosiban (a competitive antagonist of oxytocin) to alleviate uterine hyperactivity during active labor.

STUDY DESIGN: Eighteen consecutive women with uterine hyperactivity during active labor were included in this prospective observational study. Atosiban was given as a single or repeated intravenous bolus dose (6.75 mg in 0.9 mL NaCl solution) if hyperactivity was not alleviated within 5 minutes with "intrauterine resuscitation" measures.

RESULTS: Alleviation of uterine activity was achieved in 17 out of 18 cases and was almost immediate in the responders. Alleviation of accompanying fetal heart rate abnormalities was achieved in 16 out of 17 cases. In 7 of 18 women a cesarean section was performed, eventually. Atosiban was well tolerated by all women and no side effects were noted. There were no 5 minutes Apgar scores of less than 7. There were no cases of neonatal asphyxia or neonatal mortality.

CONCLUSION: Atosiban may be an effective treatment of uterine hyperactivity during active labor.

513 A POSITIVE FETAL FIBRONECTIN TEST IS ASSOCIATED WITH MORE FAVORABLE INDUCTION OF LABOR OUTCOMES JOHN YEAST[1], ALAN PEACEMAN[2], STEPHAN CARLAN[3], JOHN MORRISON[4], T. FLINT PORTER[5], JORDAN PERLOW[6], DAVID COLOMBO[7], THOMAS GOODWIN[8], THOMAS GARITE[9], DURLIN HICKOK[10], CATHERINE WILLIAMS[10], DANIEL BLOCH[11], [1]Saint Luke's Hospital, Maternal Fetal Medicine, Kansas City, MO [2]Northwestern University, Obstetrics and Gynecology, Chicago, IL [3]Orlando Regional Healthcare System, Orlando, FL [4]University of Mississippi Medical Center, Obstetrics and Gynecology, Jackson, MS [5]LDS Hospital, Maternal Fetal Medicine, Salt Lake City, UT [6]Good Samaritan Regional Medical Center, Phoenix, AZ [7]Ohio State University, Obstetrics and Gynecology, Columbus, OH [8]University of Southern California, Obstetrics and Gynecology, Los Angeles, CA [9]University of California, Irvine, Obstetrics & Gynecology, Orange, CA [10]Adeza Biomedical Corporation, Sunnyvale, CA [11]Stanford University, Palo Alto, CA

OBJECTIVE: Induction of labor (IOL) increases the risk of cesarean section (CS) and cost of care. We tested the hypothesis that a fetal fibronectin (fFN) (+) test result (>50 ng/mL) is associated with a lower rate of CS and more favorable IOL outcomes.

STUDY DESIGN: 22 centers prospectively evaluated the use of fFN in uncomplicated nulliparous women at or near term undergoing an IOL with an unfavorable cervix (Bishop Score <8). Clinicians were blinded to fFN test results. Outcomes included rate of CS, rates of vaginal delivery (VD) within 24 and 48 hours, interval from cervical ripening agent(CR) until delivery (D), and interval from initiation of oxytocin (Ox) until delivery.

RESULTS: 875 enrolled women met inclusion criteria. 42.4% of women were fFN (+). The overall rate of CS was 33.6%. Women testing fFN (−) were 29% more likely to require CS. Women that were fFN (+) were 38% more likely to deliver within 24 hours and 15% more likely to deliver within 48 hours. Intervals from CR or Ox until D were also significantly shorter with fFN (+) test results. See Table.

CONCLUSION: Induction of labor near term in nulliparous patients with an unfavorable cervix carries a high rate of CS. An fFN (+) test result is associated with more favorable induction of labor outcomes such as lower rate of CS, increased rate of VD within 24 and 48 hours, and shorter intervals to delivery. The fFN test appears to be a valuable tool for the assessment of induction of labor success.

IOL Outcomes

	fFN (+)	FFN (−)	p-value
CS	28.8%	37.1%	0.011
VD < 24 hrs	62.4%	45.1%	< 0.0001
VD < 48 hrs	68.9%	59.9%	0.007
hrs CR to D	19.1 (mean)	28.7 (mean)	< 0.0001
hrs Ox to D	12.4 (mean)	16.8 (mean)	< 0.0001

514 THE ASSOCIATION OF MATERNAL WEIGHT WITH CESAREAN RISK, LABOR DURATION, AND CERVICAL DILATION RATE FRANCIS NUTHALAPATY[1], DWIGHT ROUSE[1], JOHN OWEN[1], [1]University of Alabama at Birmingham, Obstetrics & Gynecology, Birmingham, AL

OBJECTIVE: To assess the relationship between maternal weight and cesarean delivery, cervical dilation rate, and labor duration.

STUDY DESIGN: A secondary analysis of 509 term women previously enrolled in a prospective observational study of a labor induction protocol in which standardized criteria were employed for labor management. A variety of analyses were performed, both unadjusted and adjusted. P < 0.05 was considered significant.

RESULTS: The mean weight of women who underwent cesarean (97 ± 29 kg) was significantly higher than that of women who were delivered vaginally (87 ± 22 kg, p < .0001). In a logistic regression model of nulliparas, after adjustment for infant birth weight, maternal age, and initial cervical dilation, for each 10 kg increase in maternal weight, the odds ratio for cesarean delivery was significantly increased (OR = 1.17, 95% CI 1.06, 1.29). In a linear regression model of nulliparas, the rate of cervical dilation was inversely associated with maternal weight: for each 10 kg increment, the rate of dilation was decreased by .04 cm/hr (p < .0001). After adjusting for confounders, labor duration was positively associated with maternal weight: for each 10 kg increment, an increase in the oxytocin to delivery interval of 0.6 hrs was observed in both nulliparous (p = .0002) and parous women (p = .003). Neither lower rates of oxytocin administration to heavier women, nor diminished uterine responsiveness (as reflected in measured Montevideo units) accounted for the slower labor progress.

CONCLUSION: In nulliparous women undergoing labor induction, maternal weight was associated with higher cesarean risk and longer labor, and inversely proportional to the cervical dilation rate. These preliminary data suggest that current definitions of abnormal labor progress may require modification in the obese parturient.