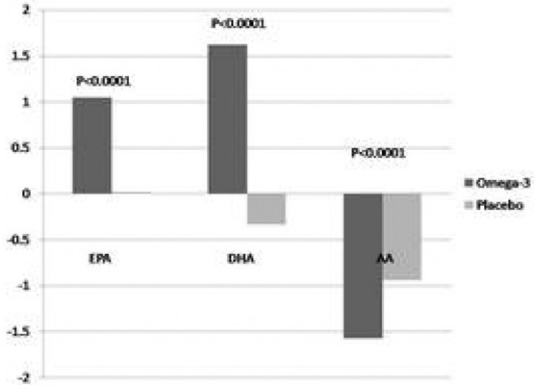
178 EFFECT OF OMEGA-3 SUPPLEMENTATION ON PLASMA FATTY ACID LEVELS MARGARET HARPER[1], [1]for the Eunice Kennedy Shriver National Institute of Child Health and Human Development MFMU Network, Bethesda, Maryland

OBJECTIVE: Daily omega-3 fatty acid (FA) supplementation, eicosapentaenoic acid (EPA,1200 mgs) and docosahexaenoic acid (DHA, 800 mgs), offered no protection from recurrent preterm delivery in a randomized placebo-controlled trial of high risk women receiving weekly 17 alpha-hydroxyprogesterone caproate. Increased levels of EPA and DHA can reduce the production of the potent 2-series prostaglandins derived from arachidonic acid (AA). We conducted this analysis to determine if the supplement altered plasma levels of EPA, DHA or AA.

STUDY DESIGN: Blood was collected at enrollment (16-21 weeks' gestation) and again at 25-28 weeks' gestation. Plasma was separated, snap frozen and stored at - 70 degrees at a central laboratory until FA determination by gas chromatography. Results were reported as percent of total FA. Wilcoxon test was used to compare the mean change (level at 25-28 weeks minus level at enrollment) in FA between the omega-3 and placebo groups.

RESULTS: Of 852 primary study participants, 512 (261 in the omega-3 group and 251 in the placebo group) had results of FA analysis from both enrollment and 25-28 weeks. The mean change in level of EPA, DHA and AA were significantly different between the omega-3 and placebo groups. (Figure)



Mean change in plasma levels as % total FA

CONCLUSION: Omega-3 supplementation raised EPA and DHA and lowered AA levels in pregnancy.

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179 FAILURE OF CERVICAL RIPENING WITH PGE2 –CAN IT BE PREDICTED? NIR MELAMED[1], AVI BEN-HAROUSH[1], RONY CHEN[1], BORIS KAPLAN[1], MOSHE HOD[1], YARIV YOGEV[1], [1]Helen Schneider Hospital for Women, Obstetrics and Gynecology, Tel Aviv, Israel, Israel

OBJECTIVE: Limited data exists concerning risk factors for ripening failure using PGE2. Thus, we aimed to identify which factors are associated with cervical ripening failure using vaginal PGE2 tablets

STUDY DESIGN: A case control retrospective study. Study group included all women admitted for cervical ripening with unfavorable Bishop's score (<7) between January 2003 and December 2007 and failed to respond to cervical ripening using PGE2 vaginal tablets (no change in Bishop's score after 5 applications of PGE2, 6-8 hours apart). A cohort of women who underwent successful cervical ripening with vaginal PGE2 in the same time period in a 3:1 served as the control group. All women were treated by the same protocol.

RESULTS: 1. overall 488 women were included of them 122 in the research group and 366 in the control group. 2. A comparison between the two groups has revealed that maternal age > 30 years (OR=2.7, 95%-CI 1.3-5.6), nulliparity (OR=4.1, 95%-CI 1.7-10.0), pre-pregnancy BMI> 25 (OR=3.5, 95%-CI 1.7-7.1), cervical dilatation <1 cm at admission (OR=9.1, 95%-CI 3.5-13.4), cervical effacement < 50% at admission (OR=5.0, 95%-CI 2.2-8.8) and gestational age < 37 weeks (OR=2.9, 95%-CI 1.3-6.6), were independently and significantly associated with cervical ripening failure with PGE2. 3. The prediction model based on these factors accounts for almost 50% of the cervical ripening failure outcome (R2 = 0.47). 4. No significant association was found between cervical ripening failure and indication for ripening, rupture of membranes, weight gain during pregnancy, diabetes or preeclampsia during pregnancy, and birthweight.

CONCLUSION: This novel study identifies risk factors for ripening failure with PGE2. Characterization of women who have high probability for cervical ripening failure with PGE2 will help to improve the consultation prior to induction and may help to choose the optimal method for labor induction in these cases.

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180 CYTOKINE PROFILING: VARIATION IN IMMUNE MODULATION IN ADVERSE VERSUS UNCOMPLICATED OBSTETRICAL OUTCOMES JEFF DENNEY[1], EDWARD NELSON[2], THADDEUS WATERS[3], PATHICK WADWA[4], LENY MATHEW[5], ROBERT GOLDENBERG[6], JENNIFER CULHANE[5], [1]University of Utah, Department of Obstetrics & Gynecology, Division of Maternal-Fetal Medicine, Salt Lake City, Utah, [2]University of California, Irvine, Department of Medicine, Division of Hematology/Oncology, Orange, California, [3]MetroHealth Medical Center - Case Western Reserve University, Cleveland, Ohio, [4]University of California, Irvine, Department of Obstetrics & Gynecology, California, [5]Children's Hospital of Philadelphia, Department of Pediatrics, Division of Adolescent Medicine, Philadelphia, Pennsylvania, [6]Drexel University College of Medicine, Department of Obstetrics & Gynecology, Center for Perinatal Research, Philadelphia, Pennsylvania

OBJECTIVE: To assess if deviations in longitudinally measured cytokines are associated with development of adverse pregnancy outcomes.

STUDY DESIGN: This is a prospective longitudinal study of maternal cytokines over pregnancy. Women ≥17 years old with a singleton gestation at < 15 weeks were enrolled. Peripheral blood was collected at 8-14 (T1), 18-22 (T2), and 28-32 (T3) weeks gestational age. Using Luminex-100 MAP®, 6 cytokines—IL-1β, IFN-γ, IL-4, IL-6, IL-10, and TNF-α—were measured from whole blood incubated in three conditions: unstimulated, PHA-stimulated, and LPS-stimulated. Data were stratified into two groups based upon pregnancy outcomes: "Uncomplicated" (delivered at or beyond 37 weeks) or "Adverse" (defined as a delivery <37 weeks gestational age or BW <2500g). Using Generalized Linear Modeling, we determined the rate of change for each cytokine from T1 to T3. An Interaction term of group with gestational age was used to compare the rates of change by pregnancy outcome. Differences were defined as significant at the 95% level.

RESULTS: 32 women with Adverse obstetrical outcomes were compared to 11 women with Uncomplicated outcomes. In both Adverse and Uncomplicated groups, TH1 cytokine (IL-1β), pleiotrophic pro-inflammatory cytokine (IL-6), and counter-regulatory cytokine (IL-10) responses decreased over the course of gestation. However, the rates of change in IL-1β, IL-6, and IL-10 were significantly different; see table. For other cytokines, trajectories did not vary significantly between the groups.

CONCLUSION: Women with a PTB or LBW newborn demonstrated significant differences in cytokine trajectory over pregnancy. This supports existing data on the importance of immunoregulation in pregnancy.

Significantly Different Cytokine Trajectories

	Uncomplicated (β-coefficient)	Adverse (β-coefficient)	p-value
IL-1β-PHA	−0.035	−0.007	0.004
IL-6-control	−0.009	−0.051	0.018
IL-10-control	−0.011	−0.059	0.045

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181 MODE OF DELIVERY AND NEONATAL RESPIRATORY MORBIDITY IN NEAR-TERM PRETERM BIRTHS CAITLIN SAINT-AUBIN[1], SARAH HOPKINS[1], DEBORAH FELDMAN[1], VICTOR FANG[1], CHARLES INGARDIA[1], ADAM BORGIDA[1], [1]Hartford Hospital, Hartford, Connecticut

OBJECTIVE: We reviewed respiratory complications for near-term (34 to 36 weeks) preterm births (PTB) at our institution based on mode of delivery.

STUDY DESIGN: We performed a retrospective cohort analysis of our hospital's perinatal and neonatal databases to identify all singleton near-term PTBs from 1998 to 2006. We compared respiratory complications for babies admitted to the NICU by mode of delivery.

RESULTS: There were 2,222 near-term PTBs during the study period with 715 (32%) NICU admissions. The overall cesarean rate was 43%. There were significantly more short-term respiratory complications for those babies born by cesarean, as shown in the table.

CONCLUSION: Recently, studies have reported an increasing rate of neonatal respiratory morbidity in near-term PTBs. The increased risk was attributed to the changing mode of delivery with an increasing cesarean rate. Our findings provide further evidence that mode of delivery significantly affects short-term neonatal respiratory complications.

Respiratory Morbidity

Morbidity	Vaginal Birth n=407	Cesarean Birth n=308	p
Mechanical Ventilation	15.2%	25%	.001
Oxygen	39.3%	57.5%	<.0001
CPAP	36.4%	50.7%	.0001
RDS	7.4%	11.4%	.06
BPD	0.7%	2.0%	.15

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