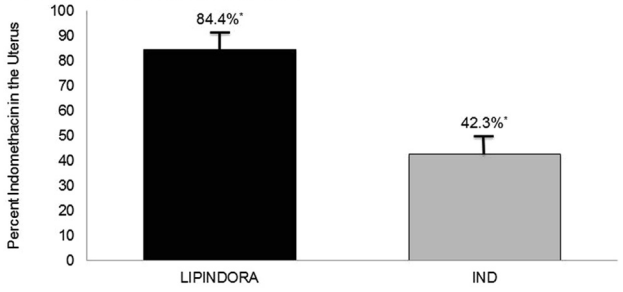
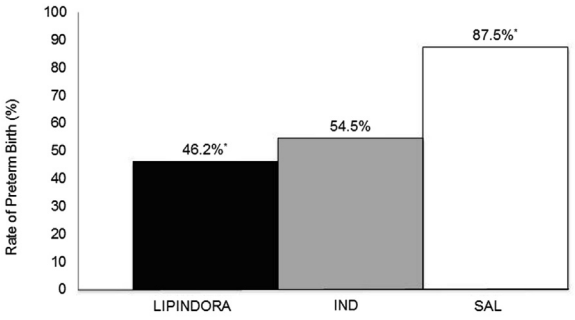
Figure 1. Percent indomethacin in the uterus of mice who received the targeted liposomal indomethacin compared to indomethacin alone



LIPINDORA- Targeted Liposome, IND- Indomethacin
Values are reported as mean ± sem
*p-value = 0.008

Figure 2. Preterm birth rate of mice who received targeted liposomal indomethacin compared to indomethacin alone



LIPINDORA- Targeted Liposome, IND- Indomethacin, SAL- Saline
*p-value = 0.029

11 Aspirin triggered-Resolvin D1 (AT-RvD1) inhibits inflammation-induced preterm birth (IIPTB) in a mouse model

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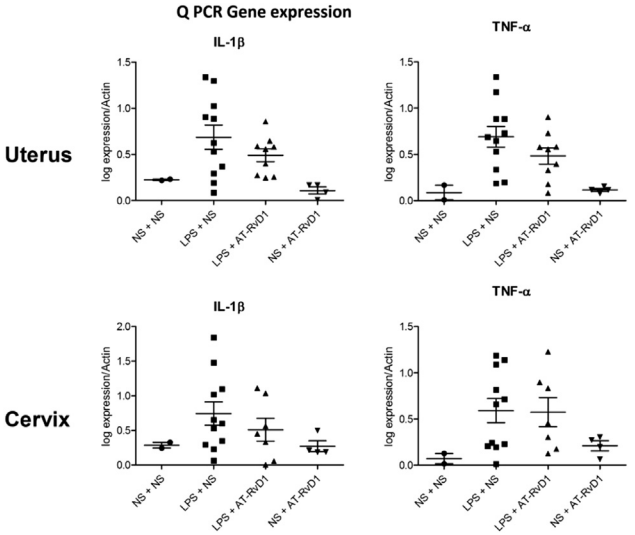
OBJECTIVE: To determine if AT-RvD1, a derivative of the omega 3 fatty acid, DHA, will reduce preterm delivery rate in a validated mouse model of IIPTB. We also tested the effect of treatment with AT-RvD1 on pro- and anti-inflammatory cytokines in maternal mouse uterus, cervix, placenta, serum, and amniotic fluid as well as fetal brain.

STUDY DESIGN: We used a mouse model of IIPTB. Dams received intrauterine injection of normal saline (NS) or lipopolysaccharide (LPS 25 mcg) per animal on E17. AT-RvD1 was injected intraperitoneally 1h after laparotomy. A total of 4 groups were utilized: LPS + NS (n=19), LPS + AT-RvD1 (n=18), NS+NS (n=3) and NS+RvD1 (n=5). Animals were evaluated for signs of preterm birth (PTB), which was defined as delivery of at least one pup within 24 hours of surgery. All animals were sacrificed at 24h and tissues collected. RT-QPCR analysis was performed for mRNA expression of IL-4, IL-6, IL-10, IL-1β, TNF-α and NOS-1. Luminex cytokine assay was performed to measure protein levels (GM-CSF, TNF-α, IL-1β, IL-4, IL-6, IL-12, IFN-γ, IL-10, IL-5, IL-2) in amniotic fluid and maternal serum.

RESULTS: The PTB rate was decreased to 28% in LPS+AT-RvD1 group in comparison with the positive control group (LPS+NS). An increase in IL-1β and TNF-α expression was seen in the uteri and cervices of LPS treated animals as compared to controls. This effect was less prominent in the fetal brain and placenta. Treatment with AT-RvD1 resulted in a decrease in mRNA expression of IL-1β and TNF-α in the uterus and cervix and a decrease in NOS1 expression in the placenta. AT-RvD1 had no effect on cytokine expression in the fetal brain. AT-RvD1 treatment also decreased IL-12 levels in maternal serum.

CONCLUSION: Treatment with AT-RvD1 decreased PTB in a mouse model of IIPTB. This decline was associated with a decrease in mRNA expression of IL-1β and TNF-α in the uterus and cervix. Further studies are needed to determine whether AT-RvD1 may have a therapeutic role in IIPTB prevention. Supported by The Pregnancy Foundation's Thomas Garite Mini-Sabbatical Grant.



12 Genetic variation may influence response to 17-alpha hydroxyprogesterone caproate (17P) for recurrent preterm birth (PTB) prevention

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OBJECTIVE: We hypothesized that maternal genotype affects variable response to 17P for recurrent PTB prevention.

STUDY DESIGN: Secondary analysis of the GPN prospective multicenter cohort study of PTB. Women (n=106) with ≥1 prior singleton SPTB who received 17P during pregnancy were classified as 17P responders (RES) or non-responders (NRES) in 2 ways: (A) a difference in delivery gestational age (GA) between 17P treated and untreated pregnancies (RES=delivered ≥3 weeks later w/17P vs. without 17P), and (B) Term vs. PTB in the studied pregnancies (RES=delivered ≥37 weeks w/17P). To assess genetic variation, all