47 The effect of the early postnatal period on developmental programming of hyperlipidemia

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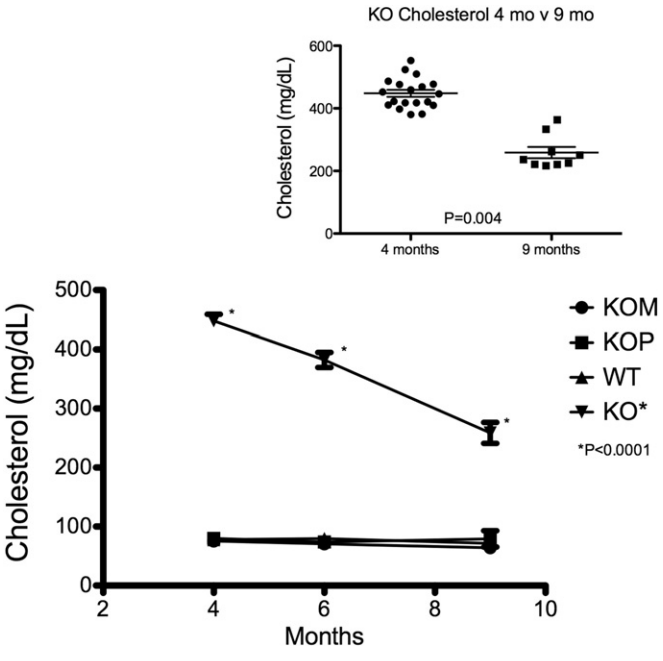
OBJECTIVE: We have previously shown that heterozygous offspring born to transgenic mice with hyperlipidemia (apoE KO), but not their genomically similar heterozygous offspring born to wild type mice (WT), have hypercholesterolemia and atherosclerosis as adult. The aim of this study was to investigate the effects of the early post-natal period on cholesterol and triglyceride in this animal model of fetal programming of atherosclerosis.

STUDY DESIGN: Homozygous apoE KO and WT mice and were cross-bred with WT or KO males in order to obtain genomically similar heterozygous pups with a paternally-derived (KOP) or maternally-derived (KOM) knockout allele as well as homozygous wild-type (WT) and knockout (KO) litters. Immediately after birth, the pups were cross-fostered with a mother with the opposite gene status (KOM and KO cross-fostered to WT; KOP and WT cross-fostered to KO). Serum cholesterol and triglyceride were evaluated in the offspring at 4, 6 and 9 months of age. Kruksal-Wallis and Wilcoxon signed-rank tests were used for statistical analysis (significance: $P<0.05$).

RESULTS: Cholesterol and triglyceride levels remained stable over time and did not differ at 4, 6, and 9 months between the cross-fostered WT, KOP and KOM groups. Cholesterol levels in the KO offspring decline at 4 and 9 months ($P=0.004$, figure), but remained significantly higher than all other groups ($P<0.0001$) at all time points. Triglyceride levels in KO offspring were significantly higher than the other groups at 4 and 6 months ($P<0.0001$), but not at 9 months of age.

CONCLUSIONS: The postnatal environment is necessary but not sufficient in the developmental programming of hyperlipidemia, as it does not alter the programming of hyperlipidemia when the intrauterine component is normal. Interestingly, a normal postnatal environment reverses the untoward effect of adverse fetal programming, and is a modifiable risk factor worthy of further investigation.



48 Does time affect the myometrial response to prostaglandin E2 and E1?

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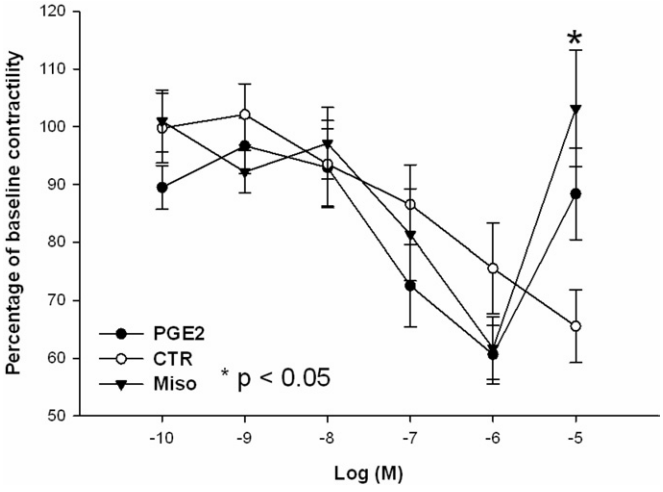
OBJECTIVE: Misoprostol (PGE1) and, to a somewhat lesser degree, dinoprostone (PGE2), have been shown to be effective when used for cervical ripening and labor induction, but tachysystole remains a potential concern with both. Our objective was to investigate the time dependent effect of PGE1 and PGE2 on in vitro myometrial contractility.

STUDY DESIGN: Lower uterine segment biopsies were obtained from 9 term non laboring women at the time of scheduled cesarean section. Tissue strips were then suspended in organ chambers for isometric tension recording. After equilibration, responses to PGE1 and PGE2 at 10^{-5} M were determined. Solvent time-controls were also run in parallel. The area under the contraction curves (AUC) over a 40 minute period before addition of prostaglandin was used as baseline. AUC was also calculated at 30, 90, 180 and 360 minutes from the time of PGE1 and PGE2 addition, and expressed as a percent of baseline. One way ANOVA with Tukey posthoc test was used for statistical analysis (significance: $p < 0.005$).

RESULTS: Misoprostol at 10^{-5} M significantly increased spontaneous myometrial contractility at 30, 90 and 180 minutes but not at 360 minutes; while PGE2 had no effect on spontaneous uterine contractions (figure).

CONCLUSIONS: Misoprostol has a more pronounced effect on uterine contractility compared to dinoprostone, which may contribute to its higher clinical effectiveness in cervical ripening and labor induction, but may account for higher untoward events. The absence of misoprostol's effect on uterine contractility after 180 minutes supports the clinical recommendation for not exceeding one administration in a 3 hour interval.



49 Independent and interactive contribution of sonographic cervical length and vaginal bleeding to risk of preterm birth

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OBJECTIVE: First and second trimester vaginal bleeding is a well-established clinical risk factor for spontaneous preterm birth (sPTB). Midtrimester sonographic cervical length also has an established relation to subsequent sPTB. Our objective was to evaluate the independent and interactive contributions of vaginal bleeding and cervical length (CL) to the risk of sPTB.

STUDY DESIGN: This is a secondary analysis of a large, multicenter cohort study designed to study predictors of preterm birth. The co-