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**CONGENITAL CARDIOLOGY SOLUTIONS
(ADULT CONGENITAL AND PEDIATRIC CARDIOLOGY)****ROLE OF NUTRITIONAL INTERVENTION ON REVERSAL OF FETAL DUCTAL CONSTRICTION CAUSED BY MATERNAL INGESTION OF POLYPHENOL-RICH FOODS**

ACC Poster Contributions

Ernest N. Morial Convention Center, Hall F

Tuesday, April 05, 2011, 9:30 a.m.-10:45 a.m.

Session Title: Pediatric Cardiology: Imaging

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Background: Maternal NSAID ingestion induces fetal ductal constriction (DC) by prostaglandin inhibition. Polyphenol-rich foods (PRF) decrease COX-2 and also inhibit prostaglandins. We raised the hypothesis that polyphenol substances present in foods consumed during pregnancy could trigger DC. This study was designed to test the hypothesis that maternal restriction of PRF in the third trimester could reverse fetal DC.

Methods: An open clinical study of 51 third trimester fetuses with DC with no history of NSAID intake was designed to assess the behavior of ductal flow after maternal dietary intervention. All mothers were submitted to a food frequency questionnaire and were oriented to withdraw PRF, being reassessed after 3 weeks. Doppler parameters were assessed before and after discontinuation of these substances. Student's t-test and Wilcoxon test were used.

Results: Mean gestational age was 32 ± 3 weeks (28-37 weeks). After discontinuation of PRF (≥ 3 weeks), 48/51 fetuses (96%) showed partial or complete recovery of DC. A decrease in mean ductal peak systolic velocity (1.74 ± 0.20 m/s to 1.31 ± 0.34 m/s, $P < 0.001$) and mean peak diastolic velocity (0.33 ± 0.09 m/s to 0.21 ± 0.07 m/s, $P < 0.001$) was observed. Mean right to left ventricular dimension ratio decreased (1.37 ± 0.26 to 1.12 ± 0.17 , $P < 0.001$) and mean ductal pulsatility index increased (1.98 ± 0.36 to 2.46 ± 0.23 , $P < 0.001$). Median daily maternal consumption of PRF was 286 mg/day and decreased after orientation to 0 mg/day, $P < 0.001$.

Conclusions: Reduction of maternal polyphenol-rich foods consumption in late pregnancy improves fetal ductal constriction. This new knowledge may influence routine obstetrical surveillance of maternal dietary habits in late pregnancy.

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