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Disclosure

Disclosure Statement:

I have no actual or potential conflict of interest in relation to this program.

Questionnaire

Question 1 - Category:

Category Preference 1: LifeCourse Windows - Pregnancy

Category Preference 2: Preterm Birth

Category Preference 3: Not indicated yet

Question 2 - Presentation Format Preference:

Oral or Poster Presentation

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Agree to comply

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Signature Date: 09-04-2011

Awards

DOHaD Basic Science Research Excellence Award for Junior Investigators

DOHaD Junior Investigator Travel Award

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DOHaD Travel Stipends for Junior Faculty & Developing-Country Scientists

Title: Maternal C-reactive Protein Is A Predictor Of Neonatal Size At Birth: Pune Maternal Nutrition Study.

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Aims: There is increasing interest in the role of maternal subclinical inflammation in fetal growth restriction. We studied the association between maternal high sensitive C-reactive protein (CRP) and offspring size at birth in Pune Maternal Nutrition Study (PMNS).

Methods: In PMNS we have information on prepregnant body size, adiposity, and socioeconomic status. Pregnancy measurements at 28 weeks gestation include anthropometry, physical activity, nutritional intake, circulating nutrients (vitamin B₁₂, folate, total homocysteine, vitamin C and vitamin D), biochemical measurements (CRP, oral glucose tolerance, hematology and lipids) and blood pressure (BP). Baby's anthropometry was measured within 72 hours of birth.

Results: Results are available in 558 mother-offspring pairs. Before conception women were (median) 21y (19, 23), height 152 cm (149, 156), body mass index of 17.8 kg/m² (16.7, 19.1) and body fat 20.4% (17.8, 23.4). At 28 weeks, plasma CRP concentrations were 1.55 (0.68-3.44)

mg/L and 28% had >3.0 mg/L. Gestation at delivery was 39.3 weeks (38.3, 40.3) and birth weight 2600 gm (2368, 2900). CRP was inversely related to age and parity and directly related to body fat percent ($p < 0.05$, all), but not with body mass index and socioeconomic status.

Pregnancy weight gain, physical activity, macronutrient (total calories, carbohydrate, proteins and fat) intake, circulating micronutrient (vitamin B₁₂, folate, vitamin C, vitamin D) concentrations, glucose tolerance, and lipids were not associated with CRP concentration. CRP was inversely associated with total homocysteine ($p=0.05$) and directly associated with systolic BP ($p=0.05$).

Mothers in highest quartile of CRP concentrations were 4.20 times (CI 1.64, 10.80) more likely to deliver preterm, and 1.68 times (CI 1.02, 2.76) more likely to deliver a low birth weight baby compared to those in lowest quartile. Association of maternal CRP and fetal growth restriction was independent of her age, adiposity, and parity.

Maternal total leucocyte count (TLC) not associated with preterm delivery and size at birth.

Conclusions: Maternal inflammation is a risk factor for early delivery and small size at birth in India.