

Diet inflammatory index in pregnancy is not related to offspring asthma and/or wheeze or pro-inflammatory cytokine and chemokine levels at birth.

Carina Venter¹, Michaela Palumbo¹, Katherine Sauder¹, Deborah Glueck¹, Anne Starling¹, Brandy Ringham¹, Liam O'Mahony², Brianna Moore¹, Ivana Yang¹, and Dana Dabelea¹

¹University of Colorado

²University College Cork National University of Ireland

June 23, 2020

Abstract

Background Two studies examining the association between maternal diet inflammatory indices (DII) during pregnancy and offspring asthma and/or wheeze have shown either no effect, or increased risk. Neither study investigated a biological pathway for the association. We examined the association between maternal DII and risk of offspring asthma and/or wheeze, and sought to determine whether cord sera cytokines/chemokines might connect maternal DII with offspring risk. Methods Analysis included 1228 dyads in Healthy Start, a prospective prebirth cohort from Colorado. DII scores were computed for each mother based on repeated 24-hour dietary recalls during pregnancy. Child diagnosis of asthma and/or wheeze up to four years was obtained from electronic medical records. For a subset of participants, cord sera was analyzed for five cytokines and two chemokines. Results Unadjusted analyses showed positive association between maternal DII scores and child asthma and/or wheeze by 4 years (OR = 1.17; 95% CI: 1.07, 1.27), but the association was attenuated and no longer significant in adjusted models (OR = 1.13; 95% CI: 0.99, 1.28). There were no significant associations between cord sera cytokines/chemokines and child asthma and/or wheeze. There were no significant associations between DII scores and any cytokine or chemokine measured. Conclusion Our study showed that the inflammatory profile of the maternal diet was not significantly associated with offspring asthma and/or wheeze or cord sera cytokines and chemokines. Although the maternal diet in pregnancy seems an obvious biological target for asthma and/or wheeze prevention, factors other than the inflammatory profile need to be investigated.

Hosted file

DII and Asthma Carina Venter June 22 2020.docx available at <https://authorea.com/users/336092/articles/461972-diet-inflammatory-index-in-pregnancy-is-not-related-to-offspring-asthma-and-or-wheeze-or-pro-inflammatory-cytokine-and-chemokine-levels-at-birth>