

VOLATILE ORGANIC COMPOUNDS AIR CONCENTRATIONS AND RESPIRATORY SYMPTOMS IN MEXICAN INFANTS FROM MOTHERS WHOSE PARTICIPATED IN A RANDOMIZED CLINICAL TRIAL DURING PREGNANCY

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Background and Aims: Early exposure to air pollution is crucial in the development of the immune response. Supplementation with omega-3 may be a protective factor for the development of allergic diseases. We realized the present analysis to determine the impact of air pollution on respiratory symptoms in infants and evaluate the interaction between supplementation with omega-3 fatty acids and air pollution exposure in this population.

Methods: We included 924 infants whose mothers were randomly assigned to receive daily supplement of 400 mg of DHA or placebo from week 18-22 of pregnancy until childbirth. During pregnancy we collected information on sociodemographics characteristics, past health history and environmental exposure. Also, we determine maternal specific IgE levels in plasma. Child respiratory symptoms information was collected using a recall questionnaire at 1, 3, 6, 9, 12 and 18 months of age. For environmental exposure, we conducted local monitoring of air pollution (NO₂ and Volatile Organic Compounds (BTX) in different city sites and the association between respiratory symptoms and air pollution exposure were analyzed using Poisson regression models.

Results: The occurrence of respiratory symptoms did not differ significantly between groups. However, the occurrence of a combined measure of some symptoms was lower in the DHA group. The heptane, hexane and xylene air concentrations were significantly related to respiratory symptoms (cough, nasal congestion and/or runny nose) ($p < 0.05$). We did not observe a potential interaction between treatment groups and air pollution exposure.

Conclusions: Exposure to heptane, hexane and xylene (BTX) air concentrations in the general environment increase the respiratory symptoms in Mexican Infants.

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