

PRENATAL ENVIRONMENTAL EXPOSURE, SUPPLEMENTATION WITH OMEGA-3 FATTY ACIDS DURING PREGNANCY AND RESPIRATORY SYMPTOMS IN INFANT FROM CUERNAVACA, MEXICO

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Background and aims: Maternal consumption of omega 3 polyunsaturated fatty acid can act as an adjuvant in the immune system and have effects on the neonatal inflammatory response. We conducted the present study to investigate the effect of prenatal docosahexaenoic acid (DHA) supplementation on respiratory symptoms and to identify the main prenatal environmental risk factors for these symptoms in infants.

Methods: We included 784 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 collect information on sociodemographics characteristics, past health history, maternal stress and environmental exposures. Also, we collected blood samples to 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. Poisson regression models were used to identify the main prenatal risk factors for respiratory symptoms.

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. We observed that the higher risk of respiratory symptoms were for the children whose mothers were randomly assigned to receive placebo. The main risks factors were use pesticides in home (OR= 1.18; 95%CI 1.08, 1.29) gender male (OR= 1.09; 95% CI 1.01, 1.18) and maternal atopy (OR= 1.03 95%CI 0.95, 1.12).

Conclusions: DHA supplementation during pregnancy decreased the occurrence of respiratory symptoms in infants and this study strengthens the evidence that the family history and prenatal environmental exposure in early stages of life increase the risk of respiratory symptoms in childhood.

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