PRENATAL ENVIRONMENTAL EXPOSURE, SUPPLEMENTATION WITH OMEGA-3 FATTY ACIDS DURING PREGNANCY AND RISK OF ATOPIC DERMATITIS IN MEXICAN INFANTS

Albino Barraza-Villarreal, *Instituto Nacional de Salud Pública, Cuernavaca, Morelos, México*
Consuelo Escamilla-Nuñez, *Instituto Nacional de Salud Pública, Cuernavaca, Morelos, México*
Leticia Hernandez-Cadena, *Instituto Nacional de Salud Pública, Cuernavaca, Morelos, México*
Peter Sly, *WHO Collaborating Centre for Research on Children's Environmental Health, Curtin University of Technology and Centre for Child Health Research, University of Western Australia, Perth, Australia*
Juan A. Rivera, *Instituto Nacional de Salud Pública, Cuernavaca, Morelos, México*
Usha Ramakrishnan, *Rollins School of Public Health, Emory University, Atlanta, GA, USA*
Isabelle Romieu, *International Agency for Research on Cancer, Lyon France*

Background and aims: The identification of family and environmental risks factors in early stages of life could help early detection of risk of atopy in children and studies suggest that omega-3 polyunsaturated fatty acids could play a role in preventing allergic diseases. We conducted this study to identify the main prenatal environmental risk factors of the atopic dermatitis in childhood whose mothers participated in a randomized clinical trial of supplementation with omega 3 fatty acids during pregnancy.
Methods: We included 785 children whose Mothers were randomly assigned to receive daily supplement of 400 mg of docosahexaenoic acid or placebo from week 18-22 of pregnancy until childbirth. During pregnancy, we obtained information on sociodemographics characteristics, environmental exposures and perceived stress. Clinical information of signs and symptoms of atopic dermatitis in infants was obtained every three months from birth until 18 months of age based on the classification of objective SCORAD at cutoff $\geq$ a 1. Logistic regression models were used to identify the main prenatal risk factors.
Results: We didn't observe significant differences in SCORAD prevalence for treatment group (25% in placebo vs 24.5% in DHA group). We observed that the higher risk of atopic dermatitis were for the infants that has been born in autumn (OR= 1.99; 95%CI 12.4, 3.19) and winter (OR= 1.85; 95%CI 1.18, 2.90) vs. spring and those born by cesarean (OR= 1.38; 95%IC 1.00, 1.92). Having spiders in the home (OR= 1.29; 95% CI 0.93, 1.79) and maternal history of allergic rhinitis (OR= 1.39; 95% CI 0.96, 2.01) were marginally associated.
Conclusions: This study strengthens the evidence that the family history and prenatal environmental exposure increase the risk of atopic dermatitis in early stages of life.
References: Blümer N, Renz H. Consumption of omega3-fatty acids during perinatal life: role in immuno-modulation and allergy prevention. J Perinat Med 2007; 35:S12-8.

Mihrshahi S, Peat JK, Webb K, Oddy W, Marks GB, Mellis CM, et al. Effect of omega-3 fatty acid concentrations in plasma on symptoms of asthma at 18 months of age. Pediatr Allergy Immunol 2004; 15:517-22