Early life IgE responses in children living in the tropics: a prospective analysis.

Abstract:
There are few birth cohort studies analyzing IgE sensitization in the tropics. We aimed to describe the evolution of total IgE and specific IgE responses to house-dust mite (HDM) allergens and Ascaris in a birth cohort (Risk Factors for Asthma and Allergy in the Tropics, FRAAT), analyzing their relationships with wheezing. Total and specific IgE were measured by ImmunoCap in mothers and children at four different time points (S1-S4) between 0 and 42 months. Parasite infection was evaluated by stool examination. Maternal total IgE (aOR: 2.43, 95% CI: 1.09-5.43; p = 0.03) and socio-demographic factors were associated with high cord blood (CB) total IgE. High CB total IgE was positively associated with higher Blomia tropicalis and Ascaris-specific IgE values during lifetime, but protected from recurrent wheezing (aOR: 0.26, 95% CI: 0.08-0.88, p = 0.03). Prevalence rates of IgE sensitization were high; at around 3 yr old, they were 33.3, 18.6, and 26.5% for B. tropicalis, Dermatophagoides pteronyssinus, and Ascaris, respectively. Indicators of unhygienic conditions were risk factors for HDM and Ascaris sensitization in children. A weak statistical association between B. tropicalis-specific IgE and ever wheezing was found (aOR: 1.47 95% CI: 1.00-2.28, p = 0.05). In a socioeconomically deprived community from the tropics,
sensitization to HDM allergens was very frequent at early life, especially to B. tropicalis. In contrast to expected according to the hygiene hypothesis, unhygienic/poverty conditions were risk factors for allergen sensitization. High CB total IgE levels were a risk factor for allergen sensitization but protected from recurrent wheezing.

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