

Maternal Vitamin D levels during late pregnancy and risk of allergic diseases and sensitization during the first year of life—a birth cohort study

ABSTRACT

Allergic diseases are the most common chronic illness in childhood. Findings from developed countries have reported associations between Vitamin D levels during pregnancy and offspring allergy risk. This prospective cohort study aimed to determine the associations between maternal Vitamin D levels during late pregnancy and allergic diseases in Malaysian infants during the first year of life. Serum 25(OH)D concentrations of 380 pregnant women in the third trimester were measured using a chemiluminescent immunoassay. Children's allergic outcomes were assessed at 3, 6, and 12 months based on parental reports. Specific IgE antibodies against food and inhalant allergens were measured in infants at 12 months of age. A total of 43.2% pregnant women were Vitamin D deficient (<30 nmol/L) and 56.8% were nondeficient (≥ 30 nmol/L). A total of 27.6% of the infants had eczema, 6.1% had wheeze, 27.4% had food sensitization, 10.8% had inhalant allergen sensitization, and 3.8% had IgE-mediated food allergy during the first year of life. Compared with the nondeficient group, maternal Vitamin D deficiency in late pregnancy was not associated with any allergic outcomes after adjustment for potential confounding factors. In conclusion, the present study does not support an association between maternal Vitamin D levels in late pregnancy and allergic outcomes during the first year of life.

Keyword: 25-hydroxyVitamin D; Pregnancy; Allergic diseases; Sensitization; Infant