ATOPIC ECZEMA/DERMATITIS

MATERNAL PERICONCEPTIONAL FOLATE STATUS AND ATOPIC DERMATITIS: A PROSPECTIVE COHORT STUDY

Ying Ye [1] - Liming Dou [1] - Yi Zhang [2] - Yalan Dou [2] - Lei Zhang [3] - Yun Li [3] - Liuhui Wang [1] - Weili Yan [2]

Children's Hospital Of Fudan University, Dermatology, Shanghai, China [1] - Children's Hospital Of Fudan University, Clinical Epidemiology, Shanghai, China [2] - Shanghai Minhang Maternal And Children Health Care Hospital, Obstetrics, Shanghai, China [3]

Background: Studies suggest that maternal nutritional status and intrauterine exposure is associated with the risk of children's allergic disorders, however results are inconclusive.

Objectives: We assessed the relationship between maternal folate, homocysteine and vitamin B-12 levels and infant atopic dermatitis (AD) occurring within 6 months.

Methods: We conducted a prospective mother-child cohort study. Pregnancies (n=484) were consecutively recruited at 12~14 gestational weeks. Red blood cell folate (RBC folate), serum folate, vitamin B-12, and homocysteine concentrations were examined. The use of folic acid supplements (before conception or at first trimester) were collected through a questionnaire. Infants were followed up at birth, 42 days, 6 months till 12 months for the incidence of AD. Diagnostic criteria of AD is referred to Williams' criteria. Multivariate logistic regression was used to analyze the associations by adjusting covariates such as maternal age, education, body mass index (BMI) and parental allergy history.

Results: In total, 107 (23.4%) of 458 infants developed AD within 6 months, with significantly more male infants affected (P=0.002). Maternal RBC folate concentration was associated with an increased risk of AD (adjusted OR 1.02; 95%CI: 1.00-1.03). The elevated RBC folate concentration (≥ 620 ng/ml) was associated with infant AD occurring within 6 months (adjusted OR 1.91; 95%CI: 1.09~3.36) and 12 months (adjusted OR 1.81, 95%CI: 1.05-3.10). However, associations were not observed for maternal serum folate, vitamin B-12, homocysteine, or maternal supplements before conception or at early gestation with infant AD.
Conclusions: We provide the first evidence that higher maternal RBC folate concentration during early gestation may be associated with increased risk of infant AD.

Keywords: atopic dermatitis, allergy, folate, pregnancy, prospective