

25-hydroxyvitamin D and health service utilization for asthma in early childhood

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Introduction

Asthma is the most common chronic illness of childhood and a common reason for hospital admission. Studies suggest that low vitamin D levels may be associated with health service utilization (HSU) for childhood asthma.

Objectives and Approach

The primary objective was to determine if vitamin D serum levels in early childhood were associated with HSU for asthma including: a) total HSU, b) hospital admissions, c) emergency department visits and d) outpatient sick visits. Secondary objectives were to determine whether vitamin D supplementation in pregnancy or childhood were associated with HSU for asthma. Prospective cohort study of children participating in the TARGet Kids! practice based research network. HSU was determined by linking each child's provincial health insurance number to health administrative databases. Multivariable quasi Poisson and logistic regression were used to evaluate the associations.

Results

2926 healthy children ages 0-6 years had 25-hydroxyvitamin D data available and were included in the primary analysis. Mean (IQR) 25-hydroxyvitamin D level was 84 nmol/L (65-98 nmol/L), 218 and 1267 children had 25-hydroxyvitamin D levels <50 nmol/L and <75 nmol/L, respectively. In the adjusted models, there were no associations between 25-hydroxyvitamin D (continuously or dichotomized at 50 and 75 nmol/L), vitamin D supplementation in pregnancy or childhood and HSU for asthma.

Conclusion/Implications

Higher vitamin D blood values do not appear to be associated with HSU for asthma in this population of healthy urban children.

