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The association between vitamin D status and recurrent wheezing in rural Bangladeshi children

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Background: The exact mechanism between the vitamin D level and recurrent wheezing is not obvious. There are a few studies investigating the relationship between recurrent wheezing and vitamin D level. Vitamin D appears to play a role in immune system and lung development in the fetus. Vitamin D receptors (VDR) have been found in fetal type II alveolar pneumocytes of rats, and may play a role in lung development, pneumocyte differentiation and surfactant secretion. A study in a large cohort of children with asthma in Costa Rica showed an association between low vitamin D levels (<30 ng/ml) and asthma severity in terms of hospitalizations, medication use and airway responsiveness. The rising prevalence of asthma may be linked to vitamin D deficiency but asthma is a multifactorial chronic disease. It may be useful to measure the levels of 25 (OH) vitamin D of the pre-school children with recurrent wheezing and give them vitamin D supplementation until the level is increased up to 30 IU/L by controlling the calcium levels in order to prevent asthma.

Objective: To observe association between vitamin D status and recurrent wheezing in preschool children.

Methods: Twenty five preschool children with recurrent wheezing and twenty five healthy, similar aged children without any history of acute or chronic illness were included in the study. The clinical features of children were recorded and serum 25-hydroxyvitamin D [25(OH) D] levels were measured. Data analysis was performed using SPSS 16 package program.

Results: The mean value of 25 (OH) D vitamin levels were 32.1±8.9 IU/L and 28.8±11 IU/L for the control and recurrent attack group respectively. Thirteen percent of subjects with recurrent wheezing had vitamin D levels in the deficient range (<20 ng/ml) and 7.9% had vitamin D levels under <20 ng/ml in the control group. The percentage of insufficient vitamin D levels (<30 ng/ml) were 8 and 7 for the patient and control group respectively. There was no statistical significance between the groups in terms of the distribution of 25 (OH) D levels.

Conclusions: The present study showed that vitamin D status did not influence recurrent wheezing in the pre-school children because there may be sufficient ultraviolet B (UVB) intensity for cutaneous synthesis of 25(OH) D in rural Bangladeshi children and or small sample size may not reflect the actual scenario.

Biography

Md. Atiar Rahman has completed his MD in Pediatrics from Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh and Fellowship in Pediatrics from Bangladesh College of Physician and Surgeon. He had also an opportunity to receive Fellowship training in Pediatric Respiratory Medicine from Great Ormond Street Hospital for Children, London, UK and "Anna Meyer" Children Hospital, Florence Italy. He is the Associate Professor of Pediatric Pulmonology, Department of Pediatrics of BSMMU. He has published more than 16 papers in reputed journals and serving as a reviewer of reputed international journals.

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