

Vitamin D Deficiency in Children: Is There a Need for Routine Supplementation?

Sir,

I read with interest article entitled “Determinants of Vitamin D Status in Indian School-children” by Mandlik *et al.*^[1] The authors noted that, in school children ($n = 359$) aged 6–12 years from a semirural government-run primary school, only 5% had sufficient levels of 25-hydroxy vitamin D [25(OH) D levels >75 nmol/L] and the rest had either vitamin D deficiency (VDD) (24%) or insufficiency (71%),

despite majority of children (80%) reporting sunlight exposure of ≥ 2 hours.

I would like to make few important comments. The authors mentioned that the duration of sunlight exposure had positive association ($P < 0.05$) whereas body fat percentage had negative association ($\beta = -0.307$; standard error = 0.1388; $P < 0.05$) with serum 25(OH)D levels. Other ways of

demonstrating relationship between two quantitative variables is correlation (positive or negative correlation), though it also does not necessarily indicate causal relationship. Regression equation can tell about the degree of change in one variable with a particular change in the second variable. The authors screened 544 children in the age group of 6–12 years (elementary school grade 1–4) from a single school in this cross-sectional study. It implies that there were 136 students in each grade (grade 1–4). Is this a real scenario to have so many students in a single grade? Authors did not mention the period of year when this study was conducted. VDD is season dependent with lower 25(OH)D levels in winter months.^[2]

Few studies from north India also demonstrated that the prevalence of VDD in apparently healthy children is as high as 90%.^[3-5] In a study involving 338 apparently healthy children in the age group of 3 months to 12 years belonging to the upper socioeconomic group in Chandigarh, the prevalence of VDD was 40.3%. On univariate analysis, VDD was associated with relatively younger age group, female sex, failure to thrive, exclusive breast-feeding, inadequate sun exposure, and no vitamin D supplements.^[5] The differences observed in the prevalence of VDD among healthy children in different studies could be due to different populations studied, latitude of residence, sunlight exposure, skin color, environmental pollution and weather, vitamin D intake (diet and supplementation), different methods used to measure 25(OH) D, and different cut-off values.^[5]

The American Academy of Pediatrics recommends intake of 10 µg/d (400 IU/d) vitamin D for all infants, children, and adolescents, beginning in the first few days of life.^[6] In India and other southeast Asian countries, where the burden of VDD is high, there are no such recommendations regarding routine supplementation or fortification of food products with vitamin D. Recently, Indian Academy of Pediatrics published practice guidelines for Pediatricians for the prevention and treatment of vitamin D and calcium deficiency in children and adolescents.^[7] In view of high prevalence of VDD in India and the important effects of vitamin D on skeletal and extraskeletal health, there is need to study the effect of routine supplementation of vitamin D in Indian children taking into account cost–benefit ratio.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Suresh K. Angurana

Department of Pediatrics, Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh, India

Address for correspondence: Dr. Suresh K. Angurana, Department of Pediatrics, Advanced Pediatric Centre, Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh, India. E-mail: sureshangurana@gmail.com

REFERENCES

1. Mandlik R, Kajale N, Ekbote V, Patwardhan V, Khadilkar V, Chiplonkar S, *et al.* Determinants of Vitamin D status in Indian school-children. *Indian J Endocr Metab* 2018;22:244-8.
2. Arabi A, El Rassi R, El-Hajj Fuleihan G. Hypovitaminosis D in developing countries-prevalence, risk factors and outcomes. *Nat Rev Endocrinol* 2010;6:550-61.
3. Marwaha RK, Tandon N, Reddy DR, Aggarwal R, Singh R, Sawhney RC, *et al.* Vitamin D and bone mineral density status of healthy schoolchildren in northern India. *Am J Clin Nutr* 2005;82:477-82.
4. Puri S, Marwaha RK, Agarwal N, Tandon N, Agarwal R, Grewal K, *et al.* Vitamin D status of apparently healthy schoolgirls from two different socioeconomic strata in Delhi: Relation to nutrition and lifestyle. *Br J Nutr* 2008;99:876-82.
5. Angurana SK, Angurana RS, Mahajan G, Kumar N, Mahajan V. Prevalence of vitamin D deficiency in apparently healthy children in north India. *J Pediatr Endocrinol Metab* 2014;27:1151-6.
6. Wagner CL, Greer FR, American Academy of Pediatrics Section on Breastfeeding; American Academy of Pediatrics Committee on Nutrition. Prevention of rickets and vitamin D deficiency in infants, children, and adolescents. *Pediatrics* 2008;122:1142-52.
7. From Indian Academy of Pediatrics 'Guideline for Vitamin D and Calcium in Children' Committee, Khadilkar A, Khadilkar V, Chinnappa J, Rathi N, Khadgawat R, *et al.* Prevention and Treatment of Vitamin D and Calcium Deficiency in Children and Adolescents: Indian Academy of Pediatrics (IAP) Guidelines. *Indian Pediatr* 2017;54:567-73.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Access this article online

Quick Response Code:



Website:

www.ijem.in

DOI:

10.4103/ijem.IJEM_215_18

How to cite this article: Angurana SK. Vitamin D deficiency in children: Is there a need for routine supplementation?. 2018;22:714-5.

© 2018 Indian Journal of Endocrinology and Metabolism | Published by Wolters Kluwer - Medknow