

Association Between Vitamin D and Asthma Control: Does it Really Exist?

We read with interest the study on the association between asthma control and serum 25-OH vitamin D level in children with moderate persistent asthma [1]. However, there are certain points we would like to highlight to bring more clarity to this issue.

1. A recently published review of guidelines [2] suggests that all except the Endocrine Society Clinical Practice Guideline (used by authors) [3] agreed upon cutoff of 20 ng/mL as sufficient, and same cut-off has been endorsed by Indian Academy of Pediatrics (IAP) [4]. Recent literature suggests that the cut-off of 20 ng/mL is more appropriate as it coincides with the level that would cover the needs of 97.5 percent of the population [4]. Adherence to the standard cutoff is very necessary as increasing the cut-off will greatly affect the prevalence rate of insufficiency and will increase the treatment rate. In this study, 93% of the uncontrolled group were deficient as per cut-off of 30 ng/mL. It will be useful to reanalyze the data with revised definitions and to see whether the association is real.
2. In results, there is no mention of the p-value/ 95% confidence interval (CI) for the association of the vitamin D deficiency/ insufficiency with asthma control. From clinical as well as statistical point of view, it is important to give Odds ratio with 95% CI in case-control studies.
3. There is no mention of the sample size in the manuscript. As the sample size is small, the study may not be powered for the given conclusion.
4. Authors should have collected and compared data on vitamin D supplementation among the groups. Beyond the age of one year, IAP recommends routine supplementation of 600 IU vitamin D/day [4]. Therefore, it will be important to know the number of children on vitamin D supplementation and still have vitamin D deficiency/insufficiency.
5. There are several reasons for poor control of asthma, including poor inhalation technique, poor compliance to therapy, and presence of comorbidities [5]. In this study, allergic rhinitis which is an important asthma comorbidity was prevalent in children in whom asthma was not well-controlled.

6. Authors should have considered to establish relationship between vitamin D level and some objective parameter for asthma control such as pulmonary function test.

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REFERENCES

1. Kaaviyaa AT, Krishna V, Arunprasath TS, Ramanan PV. Vitamin D deficiency as a factor influencing asthma control in children. *Indian Pediatr.* 2018;55:969-71.
2. Randev S, Kumar P, Guglani V. Vitamin D supplementation in childhood - A review of guidelines. *Indian J Pediatr.* 2018;85:194-201.
3. Holick MF, Binkley NC, Bischoff-Ferrari HA, Gordon CM, Hanley DA, Heaney RP, *et al.* Evaluation, Treatment, and Prevention of Vitamin D Deficiency: An Endocrine Society Clinical Practice Guideline. *J Clin Endocrinol Metab.* 2011;96:1911-30.
4. From Indian Academy of Pediatrics 'Guideline for Vitamin D and Calcium in Children' Committee, Khadilkar A, Khadilkar V, Chinnappa J, Rathi N, Khadgawat R, Balasubramanian S, *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.
5. Cook J, Beresford F, Fainardi V, Hall P, Housley G, Jamalzadeh A, *et al.* Managing the pediatric patient with refractory asthma: A multidisciplinary approach. *J Asthma Allergy.* 2017;10:123-30.

AUTHOR'S REPLY

1. The study [1] was done between August 2013 and July 2014 when the Endocrine Society Clinical Practice guidelines published in 2011 was the most recent one available. Subsequent publications also suggest that though for the skeletal effects, a serum 25 (OH) Vitamin D level of 20 ng/mL is sufficient, for the non-skeletal benefits the optimum level may be higher [2]. The guidelines referred to in the letter by the reader were all published after our study was over.
2. The original manuscript had the *P* values in the table, which were deleted during editing. The odds ratio (95% CI) for partial or poor control of asthma in the vitamin D deficient group as compared to the sufficient/insufficient group was 58.5 (9.7, 354.1) with $P < 0.001$.
3. It was a period sample as mentioned in the methodology.
4. The objectives were to study the association between