

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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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

asthma control and serum 25 (OH) Vitamin D levels. Regardless of whether the child was on supplements or not, we wanted to see if low serum level was associated with suboptimal control.

- Our study enrolled only those with good compliance and technique as mentioned in the methodology, and the comorbidities were also noted. Though more children in whom asthma was not well-controlled had allergic rhinitis (68% vs 41%), the difference was not statistically significant ($P > 0.05$).
- Though recommended, pulmonary function test is not being done routinely in our pediatric asthma patients.

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Clinical Characteristics of Tracheomalacia in Infants

We read with interest the study by Vijayasekaran, *et al.* [1] in recent issue of *Indian Pediatrics*. We must congratulate the authors who presented their experience on such a difficult area of pediatrics. However, we have few concerns related to this article:

- Authors mentioned that the basis for the diagnosis of tracheomalacia in this study was >50% reduction of airway lumen due to collapsing of anterior tracheal wall against the posterior wall. Although there is no accepted diagnostic criteria for the trachea-bronchomalacia, a luminal collapse of >25% is considered as significant and children with more than >50% of luminal collapse are usually symptomatic [2]. If authors had considered >25% luminal collapse as the basis of diagnosis, they could have diagnosed more children with tracheomalacia.
- Gastroesophageal reflux (GER) is commonly associated abnormality with trachea-bronchomalacia which could be responsible for recurrent or persistent respiratory symptoms such as wheezing, stridor, cough and aspiration pneumonia. Furthermore, GER itself can also lead to trachea-bronchomalacia and studies have shown that treatment of GER may lead to improvement in trachea-bronchomalacia [3]. The association of GER in trachea-bronchomalacia varies from 25-70% in different series [3,4]. In this study, authors did not provide any information about association of GER with

tracheomalacia, which might have been helpful in making treatment decision.

- Bronchoalveolar lavage (BAL) is an important part of bronchoscopy in pediatrics, especially when there are recurrent or persistent respiratory symptoms. In this study, many children had pneumonia, lung collapse and wheezing. Although authors have provided information about associated radiographic and echocardiography findings, they did not mention BAL findings in this study.
- Although, most often tracheomalacia is a self-limiting condition [5], authors could have shared treatment strategy and outcome in this series for the benefit of the general pediatrician.

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