

Correspondence

Vitamin D reduces eosinophilic airway inflammation in nonatopic asthma: Are we sure?

To the Editor:

The role of vitamin D as an add-on therapy in asthma is a much-debated topic, with some studies showing benefit and others showing no benefit. We hoped that the study by de Groot et al¹ would shed some light on this debate and give us some confidence to either use it or not use it in our patients with asthma. We therefore read the article with great interest. The authors reported that vitamin D helped reduce eosinophilic inflammation in patients with nonatopic asthma and thereby suggest a potential beneficial role in this subgroup of patients with asthma. However, we have some concerns regarding the design and interpretation of the results.

First, de Groot et al used a single standard dose of 400,000 IU of vitamin D as the therapeutic intervention for all the patients with asthma having vitamin D deficiency. Earlier studies have shown that both low and high doses of vitamin D can either cause or exacerbate allergies.^{2,3} We do not understand the rationale for using a fixed dose of 400,000 IU as the standard dose.

Second, the authors claimed that the control arm and the intervention arm were well matched. However, this does not seem to be true. The mean sputum eosinophil percentage in the control arm was 6.7%, whereas that in the intervention arm was 3.2%. This difference is quite significant clinically, although it may not appear to be statistically significant. In the study by de Groot et al, the intervention arm showed a 71% reduction in sputum eosinophil counts whereas the control arm showed a 44% reduction. Earlier studies have suggested that a reduction of 13% in sputum eosinophil counts is clinically significant.⁴ The results therefore do not convince us that vitamin D has beneficial effects on sputum eosinophils.

Third, the authors analyzed the high sputum eosinophil subgroup separately and showed that 4 of the 12 patients who

received vitamin D showed a significant reduction ($P = .034$) in sputum eosinophil counts 9 weeks after vitamin D supplementation. We think that the sample size is too small to meaningfully interpret the results and may well be a statistical artefact.

Last, the authors selected patients with very mild asthma (FEV₁ 97.6% and 99.1% in the control arm and the intervention arm, respectively). In clinical practice, we rarely see these patients, and the population of patients with asthma for which we are most interested in knowing the benefit of vitamin D are those with moderate-to-severe asthma.

Therefore, the study by de Groot et al does not help add any value to the ongoing debate on the role of vitamin D intervention in asthma.

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