

Journal club

High doses of vitamin D may reduce exacerbations of chronic obstructive pulmonary disease

There has been much research providing inconsistent evidence for a correlation between low levels of vitamin D and chronic conditions, such as coronary artery disease, multiple sclerosis and diabetes. It is known that vitamin D plays an integral role in the cathelicidin antimicrobial peptide, which serves a critical function in mammalian innate immune defence against invasive bacterial infection. As such, it has been hypothesised that low levels of vitamin D may be important in chronic obstructive pulmonary disease (COPD), in which there is an abnormal inflammatory reaction to inhaled particles and a reduced immune response.

In this study, the authors recruited 182 patients into a double-blind, randomised, placebo-controlled trial exploring vitamin D supplementation and COPD exacerbations. One hundred and fifty patients completed the study. Patients recruited were either current or former smokers over the age of 50 years, with a diagnosis of moderate to severe COPD. They were randomised to receive 100 000 IU of vitamin D or placebo, and were monitored for a year. The primary outcome was time to first exacerbation. While mean vitamin D levels were significantly higher in the treatment group there was no statistically significant difference for median time to first exacerbation. Secondary outcomes, including exacerbation rate and quality of life were also not significantly different between groups.

However, there was a significant reduction in exacerbations in the vitamin D group in those patients with a severe vitamin D deficiency at baseline, suggesting that supplementation may be useful in a subset of patients.

► **Lehouck A**, Mathieu C, Carremans C, *et al.* High doses of vitamin D to reduce exacerbations in chronic obstructive pulmonary disease. *Ann Intern Med* 2012;**156**:105–14.

Emily Heiden

Correspondence to Dr Emily Heiden, CT2, Maidstone and Tunbridge Wells NHS Trust, Tunbridge Wells Hospital, Tonbridge Road, Pembury, Tunbridge Wells, Kent TN2 4QJ, UK; emilyrheiden@gmail.com

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