Is hypovitaminosis D a consequence rather than cause of disease?

Chalmers and colleagues¹ have shown that vitamin D deficiency is common in bronchiectasis and correlates with markers of disease severity. The authors comment that although the study has identified a strong association, this does not demonstrate causality, but the results justify a randomised controlled trial of vitamin D therapy to determine if supplementation can improve outcomes. They mention that reduced outdoor physical activity and reduced exposure to sunlight might contribute to vitamin D deficiency.

One possibility that the authors have not considered is that hypovitaminosis D may be a consequence rather than cause of disease. Vitamin D deficiency has been associated with an ever-expanding list of diseases.² These have largely been observational studies, and when the benefits of vitamin D supplementation have been tested in randomised controlled trials, they have often not been confirmed.² Gama and colleagues³ have produced evidence that vitamin D is a negative acute-phase reactant (APR), and there can be a marked fall in serum vitamin D levels during a systemic inflammatory response. This would suggest that serum vitamin D is an unreliable marker of true vitamin D status following an acute inflammatory insult, and also that hypovitaminosis D may be the consequence, rather than the widely purported cause, of a myriad of chronic diseases.³

APRs accompany both acute and chronic inflammatory states. One would, therefore, not be surprised to find a correlation between severity of bronchiectasis and a rise in positive APRs (eg, C-reactive protein or ferritin), and neither would it be surprising to see a correlation with a fall in levels of negative APRs (eg, albumin, transferrin or vitamin D).

Charles Shee
Correspondence to Dr Charles Shee, Chest Department, Princess Royal Hospital, Farnborough Common, Orpington BR6 8ND, UK; cshee@nhs.net

Competing interests None.

Provenance and peer review Not commissioned; internally peer reviewed.
Is hypovitaminosis D a consequence rather than cause of disease?

Charles Shee

*Thorax* 2013 68: 679 originally published online February 5, 2013
doi: 10.1136/thoraxjnl-2012-203189

Updated information and services can be found at:
http://thorax.bmj.com/content/68/7/679.1

These include:

**References**
This article cites 3 articles, 3 of which you can access for free at:
http://thorax.bmj.com/content/68/7/679.1#BIBL

**Email alerting service**
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/