Is hypovitaminosis D a consequence rather than cause of disease?

Chalmers and colleagues 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. 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. Gama and colleagues 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.

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 (e.g., C-reactive protein or ferritin), and neither would it be surprising to see a correlation with a fall in levels of negative APRs (e.g., 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.

REFERENCES

2 Harvey NC, Cooper C. Vitamin D: some perspective please. BMJ 2012;345:e4695.
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#BtBL

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/