

Journal club

Does the addition of high-dose vitamin D₃ reduce the period of time required for the treatment of pulmonary tuberculosis?

This double-blind randomised placebo control trial investigated the addition of four doses of 2.5 mg of vitamin D₃ to intensive phase antimicrobial therapy (isoniazid, rifampicin, pyrazinamide and ethambutol) for tuberculosis and the effect upon culture conversion rates. Time to conversion was measured at 14, 28, 42 and 56 days compared with placebo with intensive antimicrobial therapy. The primary outcome was also characterised with respect to the expression of vitamin D₃ genotypes *Tak1* and *Fok1*.

The authors recruited one hundred and forty-six patients from 10 NHS London Trusts, of which one hundred and twenty-six were included. The median age of the patients was 30.6 years. The authors demonstrated a reduced median culture time in the vitamin D₃ group of 36 days (95% CI 31.8 to 40.2) compared with the placebo group of 43.5 days (95% CI 36.5 to 50.5). Subgroup analysis of the *Taq1* and *Fok1* vitamin D receptor types showed that patients homozygous for the *Taq1* polymorphism had reduced time to culture conversion.

In conclusion, the addition of vitamin D₃ to intensive anti-tuberculosis treatment did not confer a significant advantage compared with placebo in the time taken for sputum culture conversion except in individuals who were homozygous for the *Taq1* polymorphism. Investigation of this gene interaction and its possible clinical advantage is therefore warranted.

► Martineau AR, Timms PM, Bothamley GH, *et al.* High-dose vitamin D₃ during intensive-phase antimicrobial treatment of pulmonary tuberculosis: a double-blind randomised controlled trial. *Lancet* 2011;**377**:242–50.

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