

Nutrition Discussion Forum

Vitamin E supplementation may transiently increase tuberculosis risk in males who smoke heavily and have high dietary vitamin C intake – comments by Hernández-Garduño

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Hemilä & Kaprio⁽¹⁾ found a 72% increase in the risk of tuberculosis (TB) in males taking vitamin E supplements and having high dietary vitamin C intake; the effect was restricted to heavy smokers as part of the Alpha-Tocopherol Beta-Carotene Cancer Prevention Study. However, apart from BMI, risk factors for tuberculosis were not ascertained in detail at baseline or during the study. Unbalanced data may have biased the results. For instance, subjects from the treatment arm may have had higher rates of: previous or current contact with an active TB case, latent TB infection (LTBI) with predisposing disorders or conditions for TB disease (i.e. recent TB infection, HIV infection, injection drug use, radiographic findings suggesting previous TB, silicosis, underweight), diabetes, renal failure/haemodialysis, gastrectomy, jejunioileal bypass, solid organ transplantation and carcinoma of the head or neck⁽²⁾. Only after accounting for all of these factors may the effects of vitamins C and E be attributed as an independent risk factor for TB. The study was limited to hospital-treated TB cases where contact with active TB is more likely occurring. The authors concluded that the temporary increase in TB risk was not caused by new infections but by the reactivation of old infectious foci. However, they failed to support this conclusion. A thorough assessment at baseline might have identified subjects with 'old TB' or LTBI by means of a tuberculin skin test or chest X-ray. If more TB cases were reactivation cases as the authors stated, this favours the hypothesis that

a substantial number of participants may have been misclassified and/or infected at baseline and it was just a matter of time to reach the TB diagnosis. How do the authors reconcile all potential risk factors for TB with vitamin E supplementation as an independent risk factor for TB?

I declare no conflict of interest.

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References

1. Hemilä H & Kaprio J (2008) Vitamin E supplementation may transiently increase tuberculosis risk in males who smoke heavily and have high dietary vitamin C intake. *Br J Nutr* **101**, 146–147, doi: 10.1017/S0007114508923709.
2. American Thoracic Society (2000) Targeted tuberculin testing and treatment of latent tuberculosis infection. *Am J Respir Crit Care Med* **161**, S221–S247.