

# CARTAS AL EDITOR

## Micronutrient supplementation for pulmonary tuberculosis

*To the editor:* We read with interest the randomized double-blind study by Dr. Armijos RX *et al.*<sup>1</sup> to assess the effect of vitamin A and zinc supplementation on outcomes for patients with tuberculosis. Though the sample was small, this interesting study showed that adjunctive zinc supplementation appeared to accelerate bacterial clearance in patients with drug-sensitive, sputum smear-positive and culture-positive pulmonary disease. The effect of vitamin A supplementation was less evident.

The investigators stated that they measured BMI and recorded intakes of energy, zinc, vitamin A and other nutrients from food, supplements and other sources from month 1 to 4 and at month 6. They also measured blood levels of zinc, retinol and albumin at baseline and at months 2 and 6. While BMI was reported at baseline, it was not reported during the follow up months; we wonder whether BMI was similar throughout the study or whether there were any significant changes over time or between the two study arms. The authors mentioned that the two groups had comparable baseline and monthly mean intakes of

energy, protein, vitamin D, cholesterol and other major nutrients. In addition, in the placebo group energy and vitamin A intakes were higher at month 4, protein intake was higher throughout the study, and plasma zinc was higher at month 6 (Table II). Even though some differences between the two groups were not statistically significant, said findings indicate that food intake was not the same for both groups, which might also reflect changes in BMI over the study period.

Unfortunately, cholesterol blood levels were not measured in the study. Greater BMI changes and higher cholesterol blood levels in the experimental arm –particularly at month 3 when zinc showed its effect on bacteriological clearance– would reflect a higher intake of fatty foods by the experimental group. Therefore, it is not known whether cholesterol contributed to or confounded the bacterial clearance effect, given that a cholesterol-rich diet has been shown to accelerate bacteriologic sterilization in patients with pulmonary tuberculosis within the first week of treatment.<sup>2</sup>

In addition, the analysis of sputum for acid fast bacilli alone may not be the best choice as the outcome variable because dead bacilli may be seen after treatment; performing a sputum culture would have more precisely determined

the effect of micronutrients on bacteriological activity. Finally, there were 12 patients with cavitory disease in the micronutrient group and 11 in the placebo group. Patients with cavitory disease are considered the most infectious. It would also have been interesting to know the effect of micronutrients on sputum smear conversion in the sample of patients with cavitory disease and the presence or absence of each symptom during the follow up months to determine the effect of micronutrients on symptoms.

Conflict of interest: none declared.

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## References

1. Armijos RX, Weigel MM, Chacon R, Flores L, Campos A. Adjunctive micronutrient supplementation for pulmonary tuberculosis. *Salud Publica Mex* 2010;52(3):185-189.
2. Pérez-Guzmán C, Vargas MH, Quiñonez F, Bazavilvazo N, Aguilar A. A cholesterol-rich diet accelerates bacteriologic sterilization in pulmonary tuberculosis. *Chest* 2005 Feb;127(2):643-51.