Abstract

OBJECTIVE: To assess the effect of micronutrient supplementation on tuberculosis (TB) patient outcomes. MATERIAL AND METHODS: The randomized, double-blinded, placebo-controlled study was conducted in pulmonary TB patients undergoing directly observed treatment short course/ tratamiento acortado estrictamente supervisado (TAES/ DOTS) at IMSS in Ciudad Juarez, Chihuahua, Mexico, who were recruited during August 2005-July 2006. Consecutive patients received zinc and vitamin A supplements or matched placebo for four months. Dietary intake, blood zinc and vitamin A, immune response (IFN-γ, TNF-α, and IL-10 mRNA), and sputum smear conversion were measured. RESULTS: The proportion of micronutrient compared to placebo group subjects with a negative sputum smear by month 3 was significantly increased (p= 0.03). This occurred subsequent to increased TNF-α and IFN-γ and decreased IL-10 observed at month 2. Micronutrient supplementation appeared to accelerate the beneficial therapeutic effect of chemotherapy. CONCLUSIONS: The earlier elimination of bacilli from sputum was associated with improved zinc status and Th1 immune response. The therapeutic effect of vitamin A was less evident.

Keywords
pulmonary, tuberculosis, zinc, vitamin A, cytokines, Mexico