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**Evaluation of vitamin D levels in Indian children
with intrathoracic tuberculosis**

Sir,

We read with great interest the recent article by Khandelwal *et al*¹. In this excellent study, the authors investigated the baseline 25-hydroxy vitamin D levels in children suffering from intrathoracic tuberculosis and its association with type and outcome of tuberculosis. They concluded that type of intrathoracic tuberculosis or outcome was not affected by 25-hydroxy vitamin D levels in these children. However, children who did not demonstrate sputum conversion after intensive phase of antituberculosis therapy (ATT) had lower baseline 25-hydroxy vitamin D levels as compared to those who did. We appreciate and congratulate the authors for having addressed such an important issue. However, we have some concerns regarding this report, which we would like to share with you.

First, there are several methods for testing blood levels of total 25-OH vitamin D, however, reliability of these methods is controversial². High performance liquid chromatography (HPLC) and liquid chromatography-mass spectroscopy (LC-MS) have been reported to be the gold standard for total 25-OH vitamin D, whereas immunoassay techniques have lower reliability as much as 10 per cent². Therefore, HPLC or LC-MS methods should have been used to improve the sensitivity and specificity of the study.

Secondly, in the light of current knowledge, antituberculosis drugs, which are isoniazid and rifampicin may cause 25-hydroxy vitamin D deficiency by induction of P450 enzyme activity, which metabolizes calcidiol to inactive vitamin D metabolites³. In addition to these drugs, anticonvulsants, antiretroviral drugs, glucocorticoid and antifungal agents may also cause

25-hydroxy vitamin D deficiency⁴. However, these confounders have not been mentioned in the study.

Thirdly, tuberculosis has traditionally been associated with low socio-economic condition, which also may be associated with poor nutrition. Therefore, tuberculosis can already coexist with 25-hydroxy vitamin D and other nutritional deficiencies⁵. However, the authors have not mentioned about these factors which may affect the conclusion of the study. Furthermore, we think that it would be more valuable to present 25-hydroxy vitamin D levels of the healthy control group for more accurate conclusion.

Consequently, socio-economic condition, nutritional status, measurement techniques, medication, duration of sun exposure and degree of skin pigmentation, which affect the levels of 25-hydroxy vitamin D should be considered as confounders, thus the accuracy of the study can be increased.

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