Title: Measurement of exhaled nitric oxide in patients with pulmonary tuberculosis

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Body: The measurement of fractional exhaled nitric oxide (FeNO) provides the activity of airway inflammation. However, the role of FeNO in the diagnosis and treatment of pulmonary tuberculosis (TB) remains controversial. The aims of this study were: 1) to determine whether levels of FeNO were elevated in patients with pulmonary TB and its potential relationship with other clinical variables; 2) to investigate the change of FeNO after anti-TB treatment; 3) to find out factors affecting levels of FeNO in response to pulmonary TB infection. We enrolled 69 patients with newly diagnosed pulmonary TB and 118 healthy control subjects. For those with pulmonary TB, FeNO was measured twice: at entry and after two months of anti-TB treatment. The patients with pulmonary TB before anti-TB treatment had higher levels of FeNO compared to the control subjects, although the difference did not reach statistical significance (27.7 ± 17.6 vs. 27.0 ± 10.8 ppb, p=0.531). In a multivariate regression analysis, no significant relationship was found between pulmonary TB infection and levels of FeNO before treatment. In addition, initial levels of FeNO were not related to any of clinical variables of pulmonary TB including the disease extent on a chest radiograph, a burden of acid fast bacilli smear and fever at entry. Despite of anti-TB treatment for two months, levels of FeNO were not decreased significantly (27.0 ± 18.3 ppb to 24.0 ± 10.7 ppb, p=0.717). Also, there was no significant factor affecting the failure of FeNO decline after treatment. These results suggest that levels of FeNO in patients with pulmonary TB were neither elevated than healthy control nor reduced by anti-TB treatment.