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# Predominant Determinants of Delayed Tuberculosis Sputum Conversion in Indonesia

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## Abstract

**Context:** Sputum conversion in the first 2 months of tuberculosis (TB) treatment is closely related to successful treatment and a decrease in the likelihood of relapse. In 2015, there were 76% high TB burden countries with low rate of TB successful treatment. **Aims:** This study aims to evaluate the correlation between delayed sputum conversion and several determinants including social determinants, smoking, malnutrition, and type II diabetes mellitus (DM). **Settings and Design:** A case-control approach was used to study the potential determinants. A case sample group consisted of smear-positive TB patients with delayed sputum conversion (31 patients) at community health centers in Bandar Lampung, Indonesia. Meanwhile, a control sample group consisted of smear-positive TB patients with sputum conversion (62 patients). **Subjects and Methods:** Primary data consisted of social determinants and smoking, were collected through in-depth interviews. Meanwhile, secondary data consisted of malnutrition, DM, and sputum conversion were obtained from the medical record. **Statistical Analysis Used:** Data were analyzed using Chi-square and multivariate logistic regression. **Results:** Low education (odds ratio [OR]: 5.313; 95% (confidence interval [CI]: 1.711–16.503), low social class (OR: 4.993; 95% CI: 1.430–17.430), smoking (OR: 7.457; 95% CI: 1.757–31.640), and DM (OR: 7.168; 95% CI: 1.746–29.431) influenced delayed sputum conversion. **Conclusions:** TB control programs in high TB burden countries with low rate of TB successful treatment, should be integrate TB treatment education, smoking cessation programs and follow-up treatments for TB patients with DM to improve the probability of sputum conversion and successful treatment.

**Keywords:** Delayed sputum conversion, diabetes mellitus, smoking, social determinants