

## ABSTRACT

### ***Mycobacterium tuberculosis* Detection on Oral Buccal Mucosa of Pulmonary**

### **Tuberculosis Patients based on PCR Technique**

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Tuberculosis is one of the world's health problems, as an infectious disease with larger affects on mortality than HIV / AIDS. Increased TB case detection will reduce morbidity, mortality, and infection transmission risk. It shows that new, easy, fast, accurate, and inexpensive diagnostic methods in tuberculosis cases detection are needed in order to TB control.

Several studies have been conducted to obtain alternative specimens other than sputum in the diagnosis of tuberculosis, including oral samples, such as mouth rinse, saliva, dental plaque, and oral buccal mucosal epithelium. This study aimed to determine the role of *Mycobacterium tuberculosis* detection in oral buccal swabbing of tuberculosis patients based on PCR technique.

This study was conducted on new pulmonary tuberculosis patients in TB outpatient unit of Dr. Soetomo General Hospital in July 2017 - January 2018. Each study subject was swabbed on the buccal mucosa of the oral cavity for subsequent examination of PCR, AFB, and culture to detect *Mycobacterium tuberculosis* in the oral cavity.

The results showed that *Mycobacterium tuberculosis* was detected on buccal swab of buccal mucosa from 2 study subjects (11%) using PCR, whereas in AFB and culture examination methods, no *Mycobacterium tuberculosis* was detected on buccal mucosa of the oral cavity. This was considered to be associated with *Mycobacterium tuberculosis* that was carried by infectious sputum into the oral cavity, but there was an adequate local defense of the oral cavity, such as oral normal flora response and antibacterial function againsts *Mycobacterium tuberculosis*. Accordingly, the microorganisms then failed to get deposited on the mucosal surface and dead. The concordance analysis of *Mycobacterium tuberculosis* detection on buccal swabbing was performed by calculating Cohen's kappa, and value of these three methods against the direct smear sputum examination results are in the poor category. Therefore, this study showed that *Mycobacterium tuberculosis* was detected on buccal mucosa swab of tuberculosis patients based on PCR technique, but its detection is a less suitable method as the diagnostic approach of pulmonary tuberculosis.

Keywords: Tuberculosis, oral, *Mycobacterium tuberculosis*, swab.