

## ABSTRAK

**NILAI DIAGNOSTIK *FASTSURE TB DNA RAPID TEST* UNTUK  
DIAGNOSIS TUBERKULOSIS PARU**

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**Pendahuluan**

Diagnosis tuberkulosis (TB) di Indonesia menurut Kemenkes RI 2014 masih mengandalkan pemeriksaan mikroskopis Basil Tahan Asam (BTA) dari hapusan sputum namun memiliki sensitivitas dan spesifisitas diagnostik yang rendah. Sensitivitas diagnostik kultur *M. tuberculosis* pada media Lowenstein Jensen (LJ) lebih tinggi daripada mikroskopis BTA namun hasilnya memerlukan waktu 6-8 minggu. *Fastsure TB DNA Rapid Test* merupakan tes deteksi DNA *M. tuberculosis* yang cepat, praktis, relatif tidak mahal, bila dugaan klinis TB ada namun BTA negatif.

**Tujuan**

Mengevaluasi nilai diagnostik *Fastsure TB DNA Rapid Test* untuk diagnosis tuberkulosis paru.

**Metode**

Penelitian observasional potong lintang selama Juli sampai Desember 2015. Total 59 spesimen sputum dari 33 orang suspek tuberkulosis paru dan 25 orang non tuberkulosis dari RS. Paru Karang Tembok Surabaya. Setiap spesimen dilakukan pemeriksaan mikroskopis BTA, kultur *M. tuberculosis* pada media LJ sebagai standar baku emas dan *Fastsure TB DNA Rapid Test*. Spesimen dilakukan ekstraksi DNA dan amplifikasi setelah dekontaminasi. DNA terekstraksi dimasukkan ke dalam tabung dan *cartridge*. Hasil diamati dalam waktu 30 menit berupa perubahan warna merah pada pita.

**Hasil**

Sensitivitas dan spesifisitas diagnostik *Fastsure TB DNA Rapid Test* masing-masing 84,8 % dan 92 %. Sensitivitas dan spesifisitas diagnostik mikroskopis BTA masing-masing 90,9 % dan 92 %. Kesesuaian hasil pemeriksaan mikroskopis BTA dan *Fastsure TB DNA Rapid Test* sebesar 0,862.

**Simpulan**

*Fastsure TB DNA Rapid Test* merupakan pemeriksaan yang cepat, praktis, relatif tidak mahal untuk diagnosis *M. tuberculosis* dari spesimen klinis khususnya pada BTA negatif.

**Kata kunci:** mikroskopis BTA, *Fastsure TB DNA Rapid Test*, kultur *M. tuberculosis*.

## ABSTRACT

### DIAGNOSTIC VALUE OF *FASTSURE TB DNA RAPID TEST* FOR DIAGNOSIS OF PULMONARY TUBERCULOSIS

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#### **Introduction**

The diagnosis of tuberculosis (TB) in Indonesia based on the Ministry of Health 2014 still relies on microscopic examination of Acid Fast Bacilli (AFB) of sputum smear but has a low diagnostic sensitivity and specificity. The diagnostic sensitivity of *M. tuberculosis* culture on Lowenstein Jensen (LJ) media is higher than microscopic smear but needs 6-8 weeks to provide positive result. *Fastsure TB DNA Rapid Test* is rapid, relatively inexpensive and simple for detecting *M. tuberculosis* when the clinical symptoms are TB but sputum smear is negative.

#### **Aim**

To evaluate the diagnostic value of *Fastsure TB DNA Rapid Test* for the diagnosis of pulmonary tuberculosis.

#### **Method**

This study design was observational cross sectional and was done in July until December 2015. A total of 59 sputum specimens from 33 subjects with suspected pulmonary tuberculosis and 25 subjects of non tuberculosis from Karang Tembok Pulmonology Hospital was obtained. Each specimen underwent smear microscopic examination, *M. tuberculosis* culture on LJ media as the gold standard and *Fastsure TB DNA Rapid Test*. After decontamination procedure, specimens were subjected to DNA extraction and amplification. Extracted DNA was inserted into the tube and cartridge. The presence of a change to a red color of the strip was observed within 30 minutes.

#### **Results**

The diagnostic sensitivity and specificity of *Fastsure DNA TB Rapid Test* were respectively 84.8% and 92%. The diagnostic sensitivity and specificity of microscopic smear were respectively 90.9% and 92%. The concordance result of microscopic AFB and *Fastsure TB DNA Rapid Test* was 0.862.

#### **Conclusion**

*Fastsure TB DNA Rapid Test* is rapid, relatively inexpensive, and simple for diagnosis of *M. tuberculosis* from clinical specimens particularly for negative acid fast bacilli.

**Keywords:** *microscopic smear, Fastsure TB DNA Rapid Test, culture of M. tuberculosis.*