

ANALISIS PERBANDINGAN HASIL PEMERIKSAAN TUBERKULOSIS PARU PADA PASIEN DIABETES MELITUS MENGGUNAKAN METODE MIKROSKOPIS BAKTERI TAHAN ASAM (BTA) DAN TES CEPAT MOLEKULER (TCM)

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ABSTRAK

Latar Belakang Indonesia menghadapi tantangan signifikan dalam penanggulangan penyakit Tuberkulosis (TBC). Tercatat lebih dari 889.000 kasus pada awal Maret 2025, pasien dengan komorbiditas Diabetes Melitus¹ (DM) memiliki risiko jauh lebih tinggi terhadap infeksi TBC paru. Pemilihan metode diagnostik yang akurat dan sensitif sangat krusial. **Tujuan** penelitian untuk menganalisis hasil pemeriksaan TBC paru pasien Diabetes Melitus menggunakan metode mikroskopis Bakteri Tahan Asam (BTA) dan Tes Cepat Molekuler (TCM). **Metode** menggunakan desain *quasi-experiment* yang dilaksanakan di Laboratorium RSUD Kabupaten Melawi periode Desember 2025 hingga Februari 2026. Sampel penelitian terdiri dari 30 pasien Diabetes Melitus terkonfirmasi positif TBC paru. Data diperoleh melalui pemeriksaan laboratorium secara langsung menggunakan kedua metode tersebut, kemudian dianalisis secara univariat dan bivariat menggunakan uji statistik *Mann-Whitney U* untuk melihat signifikansi perbedaan. **Hasil** Pemeriksaan mikroskopis BTA didapatkan 30 sampel positif dengan distribusi (+1) 43,3%, (+2) 33,3%, dan (+3) 23,3%. Pemeriksaan TCM mendeteksi sampel dengan distribusi *MTB Detected Very Low* (10,0%), *Low* (30,0%), *Medium* (36,7%), dan *High* (23,3%). Hasil uji statistik menunjukkan nilai *Asymp. Sig. (2-tailed)* < 0,001, membuktikan adanya perbedaan hasil signifikan antara kedua metode tersebut. **Kesimpulan** terdapat perbedaan signifikan dalam deteksi beban kuman antara metode BTA dan TCM pada pasien DM. TCM terbukti memberikan hasil yang lebih komprehensif.

Kata kunci: Tuberkulosis paru, Diabetes Melitus, BTA, TCM

ABSTRACT

**COMPARATIVE ANALYSIS OF PULMONARY TUBERCULOSIS
EXAMINATION RESULTS IN DIABETES MELLITUS PATIENTS USING
BTA AND TCM METHOD**

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Background: Indonesia faces significant challenges in combating tuberculosis (TB). With more than 889,000 cases recorded as of early March 2025, patients with comorbid diabetes mellitus (DM) are at a much higher risk of pulmonary TB infection. The selection of accurate and sensitive diagnostic methods is crucial. The objective of this study was to analyze the results of pulmonary TB testing in patients with diabetes mellitus using the acid-fast bacilli (AFB) microscopy method and the Rapid Molecular Test (RMT). The study employed a quasi-experimental design and was conducted at the Melawi District General Hospital Laboratory from December 2025 to February 2026. The study sample consisted of 30 patients with diabetes mellitus who tested positive for pulmonary TB. Data were obtained through direct laboratory testing using both methods and were then analyzed using univariate and bivariate analyses with the Mann-Whitney U test to assess the significance of differences. The results of the BTA microscopic examination showed 30 positive samples with the following distribution: (+1) 43.3%, (+2) 33.3%, and (+3) 23.3%. The TCM test detected samples with the following distributions: MTB Detected Very Low (10.0%), Low (30.0%), Medium (36.7%), and High (23.3%). The statistical test results showed an Asymp. Sig. (2-tailed) value < 0.001 , proving a significant difference in results between the two methods. Conclusion: There is a significant difference in bacterial load detection between the BTA and TCM methods in patients with DM. TCM has been shown to provide more comprehensive results.

Keywords: Pulmonary Tuberculosis, Diabetes Mellitus, AFB, TCM