ABSTRAK

Latar belakang: Pemeriksaan mikroskopis BTA (Basil Tahan Asam) dengan pewarnaan *Ziehl Neelsen* merupakan metode skrining utama dalam diagnosis tuberkulosis (TB) di fasilitas pelayanan kesehatan dasar. Namun, viskositas sputum yang tinggi sering kali menghambat efektivitas pemeriksaan. Penggunaan *N-Acetyl-L-Cystein* (NALC) sebagai agen mukolitik dapat menjadi alternatif untuk meningkatkan sensitivitas deteksi BTA.
Tujuan: Penelitian ini bertujuan untuk mengetahui perbedaan hasil pemeriksaan BTA metode konvensional dan metode pengenceran NALC 2% pada pewarnaan Ziehl-Neelsen.
Metode: Penelitian ini merupakan kuasi-eksperimen laboratorium dengan desain *pretest-posttest non-equivalent control group*. Sampel sputum dari 30 pasien suspek TB diperiksa terlebih dahulu menggunakan metode konvensional (pretest), kemudian diproses kembali dengan metode pengenceran menggunakan *N-Acetyl-L-Cystein* (NALC) 2% dan sentrifugasi (posttest). Kedua hasil pemeriksaan tersebut kemudian dibandingkan secara mikroskopis setelah pewarnaan *Ziehl Neelsen*. Data dianalisis menggunakan uji Wilcoxon Signed Rank.
Hasil: Dari 30 sampel, 9 sampel (30%) menunjukkan hasil positif pada kedua metode, 3 sampel (10%) hanya positif pada metode NALC, dan 18 sampel (60%) negatif pada kedua metode. Tidak ditemukan sampel yang hanya positif pada metode konvensional. Hasil uji Wilcoxon menunjukkan nilai Z sebesar -2,803 dan nilai signifikansi (Asymp. Sig. 2-tailed) sebesar 0,005 yang berarti terdapat perbedaan yang signifikan secara statistik antara kedua metode.
Kesimpulan: Terdapat perbedaan yang signifikan antara hasil pemeriksaan mikroskopis BTA menggunakan metode konvensional dan metode pengenceran sputum dengan *N-Acetyl-L-Cystein (NALC)* 2% pada pewarnaan *Ziehl-Neelsen*.

Kata kunci: Tuberkulosis, BTA, Ziehl-Neelsen, NALC, pengenceran sputum.

ABSTRACT

Background: Microscopic examination of Acid-Fast Bacilli (AFB) using Ziehl-Neelsen staining is the primary screening method for tuberculosis (TB) diagnosis in primary healthcare facilities. However, the high viscosity of sputum often hinders the effectiveness of this examination. The use of *N-Acetyl-L-Cystein* (NALC) as a mucolytic agent may serve as an alternative to improve the sensitivity of AFB detection.
Objective: This study aims to determine the difference in AFB examination results between the conventional method and the 2% NALC dilution method using Ziehl-Neelsen staining.
Methods: This study was a laboratory-based quasi-experimental design with a pretest-posttest non-equivalent control group. Sputum samples from 30 suspected TB patients were first examined using the conventional method (pretest), then reprocessed using the 2% NALC dilution method followed by centrifugation (posttest). Both results were then observed microscopically after Ziehl-Neelsen staining. Data were analyzed using the Wilcoxon Signed Rank test.
Results: Of the 30 samples, 9 samples (30%) were positive by both methods, 3 samples (10%) were positive only by the NALC method, and 18 samples (60%) were negative by both methods. No samples were found to be positive only by the conventional method. The Wilcoxon test yielded a Z value of -2.803 and a significance level (Asymp. Sig. 2-tailed) of 0.005, indicating a statistically significant difference between the two methods.
Conclusion: There is a significant difference between the results of microscopic examination of AFB using the conventional method and the sputum dilution method with 2% *N-Acetyl-L-Cystein* (NALC) in Ziehl-Neelsen staining.

Keywords: Tuberculosis, AFB, Ziehl-Neelsen, NALC, sputum dilution.