

## INTISARI

**Latar belakang:** Tuberkulosis (TB) merupakan masalah global terutama di negara berkembang dengan *Mycobacterium tuberculosis* sebagai penyebab. Pemeriksaan sputum merupakan pemeriksaan yang sederhana dan cepat untuk deteksi bakteri tahan asam (BTA) dan telah digunakan secara luas untuk diagnosis TB akan tetapi kebanyakan pengecatan masih dilakukan secara manual. Angka deteksi tuberkulosis metode otomatis penelitian sebelumnya tidak berbeda dengan metode manual. Belum diketahui apakah ada perbedaan angka deteksi tuberkulosis paru melalui pengecatan bakteri tahan asam metode otomatis dengan manual di Indonesia.

**Tujuan:** Untuk mengetahui perbandingan pengecatan BTA secara otomatis dan secara manual dalam mendeteksi TB paru.

**Metode:** Penelitian ini merupakan penelitian observasional analitik dengan disain potong lintang. Subyek penelitian ini meliputi pasien tersangka tuberkulosis paru dewasa berdasarkan kriteria Pedoman Nasional Pengendalian Tuberkulosis di Rumah Sakit Khusus Paru Respira Yogyakarta. Sampel yang diambil berupa sputum sewaktu-pagi-sewaktu. Semua sampel dilakukan pengecatan BTA dengan metode manual dan metode otomatis.

**Hasil:** Penelitian ini melibatkan 161 subyek penelitian; dengan median umur 50 (18-83) tahun; 94 (58,4%) subyek laki-laki dan 67 (41,6%) subyek perempuan. Uji *interobserver* dalam pembacaan apusan BTA menunjukkan nilai Kappa 1 yang berarti mempunyai kekuatan kesepakatan yang baik. Apabila *scanty* tidak dimasukkan sebagai positif maka angka deteksi TB paru adalah 13,67% (metode manual) dan 13,04% (metode otomatis). Jika *scanty* dimasukkan sebagai hasil positif maka angka deteksi TB paru adalah 16,77% (metode manual) dan 16,15% (metode otomatis). Uji *Chi square* angka deteksi TB paru ketika *scanty* tidak dianggap positif dan ketika *scanty* dianggap positif menunjukkan perbedaan yang tidak bermakna secara statistik ( $p=0,870$  dan  $p=0,881$ , berurutan).

**Simpulan:** Angka deteksi TB paru melalui pengecatan BTA metode otomatis tidak berbeda dibanding metode manual.

*Kata kunci:* tuberkulosis – sputum – BTA – manual – otomatis - angka deteksi

## ABSTRACT

**Background:** Tuberculosis (TB) is a global problem especially in developing country with *Mycobacterium tuberculosis* as the etiological agent. Sputum examination is a simple dan fast examination to detect acid fast bacteria (AFB) and has been widely used for the diagnosis of tuberculosis but most of the staining is still done manually. Previous studies suggested that the detection rate of tuberculosis using automatic method is not different than that using manual method. However, it is still unknown clearly whether there is a difference in the detection rate of pulmonary tuberculosis between automatic method and manual methods of acid fast staining in Indonesia.

**Objective:** to compare automatic and manual AFB staining in detecting pulmonary tuberculosis

**Methods:** This was an observational analytic study with cross sectional design. Subjects were adult patients with suspected pulmonary tuberculosis based on criteria from National Guidelines for Tuberculosis Control in Respira Lung Hospital Yogyakarta. Samples were spot-morning-spot sputum. All samples had both manual and automatic acid fast staining.

**Results:** This study included 161 subjects; with a median age of 50 (18-83) years; 94 (58.4%) subjects were male and 67 (41.6%) subjects were female.. Interobserver agreement in reading AFB slides showed index Kappa of 1, indicating perfect agreement. If scanty was not considered as true positive result, detection rate of pulmonary TB were 13.67% (manual method) and 13.04% (automatic method). If scanty was considered as true positive result then detection rate of pulmonary TB were 16.77% (manual method) and 16.15 % (automatic method). Chi square test for detection rate of pulmonary TB in non-true positive and true positive result for scanty readings did not found statistically significant differences ( $p=0,870$  and  $p=0,881$ , respectively)

**Conclusion:** Detection rate of pulmonary TB using AFB staining with automatic method was not different to manual method.

Keywords: *tuberculosis – sputum – AFB – manual – automatic - detection rate*