Validitas Pemeriksaan *Complex Specific Antigen Mycobacterium tuberculosis Region of Difference* 1–3 Metode *Rapid Immunochromatography* pada Sputum Penderita Tuberkulosis Paru

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Abstrak

Tuberkulosis (TB) paru merupakan masalah kesehatan global. Diagnosis tuberkulosis paru saat ini berdasarkan pemeriksaan mikroskopis basil tahan asam (BTA) pada sputum dengan pewarnaan Ziehl Nelseen, namun sensitivitasnya rendah. Pemeriksaan antigen TB metode *rapid immunochromatography* (ICT) adalah suatu tes yang cepat, mudah, praktis, dan tidak memerlukan keterampilan khusus. Tes ini mendeteksi antigen yang disekresi *Mycobacterium tuberculosis* yaitu *early secretory antigenic* target 6 kDa protein (ESAT6), *culture filtrate protein* (CFP10), dan *Mycobacterium protein tuberculosis* (MPT64) yang disandi oleh gen *region of difference (*RD)1, *RD2*, dan *RD3*. Tujuan penelitian untuk mengetahui validitas antigen TB ICT dalam mendiagnosis tuberkulosis paru. Penelitian dilaksanakan September 2012–Maret 2013 di Rumah Sakit Dr. Hasan Sadikin Bandung. Bentuk penelitian adalah observasional deskriptif dengan rancangan penelitian potong lintang dan analisis uji diagnostik. Setiap spesimen sputum dilakukan pemeriksaan mikroskopis BTA dan antigen TB *rapid* ICT. Biakan *M. tuberculosis* pada medium Ogawa digunakan sebagai standar baku emas. Tes niasin dilakukan pada koloni yang tumbuh. Didapatkan 149 subjek penelitian, kelompok usia terbanyak pada usia 30–39 tahun. Hasil pemeriksaan biakan didapatkan 56 sampel tumbuh, 86 tidak tumbuh, dan 7 terkontaminasi. Sensitivitas dan spesifisitas pemeriksaan antigen TB *rapid* ICT masing masing adalah 95,7% dan 87,2%. Simpulan, pemeriksaan antigen TB *rapid* ICT mempunyai validitas yang tinggi, sehingga dapat digunakan sebagai alternatif pemeriksaan laboratorium untuk diagnosis TB paru. [**MKB.** 2014;46(4):241–46]

Kata kunci: Antigen TB *rapid* ICT, biakan *M. tuberculosis*, medium Ogawa, mikroskopis BTA

Validity of Complex Specific Antigen Mycobacterium tuberculosis Region of Difference 1–3 Examination Rapid Immunochromatography Method in Sputum Pulmonary Tuberculosis Patient

Abstract

Pulmonary tuberculosis (TB) is still a global health problem. The diagnosis of pulmonary tuberculosis is based on sputum smear microscopy for acid fast bacilli (AFB) using Ziehl-Neelsen staining. However, this method has low sensitivity. Tuberculosis antigen immunochromatographyrapid test (ICT) is a quick, easy, and practical test which does not require special skills. This test is used to detect the antigen secretion of early secretory antigenic target 6 kDa protein (ESAT6), culture filtrate protein (CFP10)and Mycobacterium protein tuberculosis (MPT64) from Mycobacterium tuberculosis which are encoded by the region of difference (RD) 1, RD2 and RD3 genes. The aim of this study was to determine the validity of TB antigen for the diagnosis of pulmonary tuberculosis. The study was conducted during the period of September 2012 to March 2013 in Dr. Hasan Sadikin General Hospital (RSHS) Bandung. This study is a descriptive observational study using cross sectional approach and validity analysis. From September 2012 until March 2013 there were 149 subjects, in which the dominant age group was 30–39 years. All the specimens were cultured on Ogawa medium as the gold standard and niasin tests were performed on all positive cultures. The TB antigen rapid ICT and sputum smear microscopy AFB were done on all the samples. From 149 subjects, 56 were positive, 86 were negative and 7 were contaminated. The sensitivity and specificity of TB antigen rapid ICT were 95.7% and 87.2%, respectively. In conclusion, TB antigen rapid ICT has a high validity which can be used as alternative laboratory tests for screening in patients with suspected pulmonary tuberculosis. [**MKB.** 2014;46(4):241–46]

Key words: AFB smear, M. tuberculosis culture, Ogawa medium, TB antigen rapid ICT

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