

Perbandingan Hasil Pemeriksaan IgG Spesifik Aspergillus dengan Metode Enzyme-Linked Immunosorbent Assay (ELISA) Manual dan Otomatis pada Pasien dengan Riwayat Tuberkulosis = Comparison of Aspergillus-specific IgG Detection using Manual and Automated Enzyme-Linked Immunosorbent Assay (ELISA) in Post Tuberculosis Patients

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Abstrak

Latar belakang: Indonesia memiliki beban tuberkulosis yang tinggi. Kerusakan paru yang ditimbulkan mendasari terjadinya aspergillosis paru kronik (APK). Salah satu kriteria diagnosis APK ialah bukti keterlibatan Aspergillus. Mempertimbangkan keterbatasan kultur, deteksi antibodi ELISA menjadi modalitas alternatif. Penelitian ini bertujuan membandingkan performa diagnostik pemeriksaan IgG spesifik Aspergillus ELISA manual dan otomatis pada pasien riwayat TB paru. Metode: Penelitian potong lintang ini membandingkan pemeriksaan IgG spesifik Aspergillus ELISA manual Bordier dan ELISA otomatis Immulite menggunakan serum pasien dengan riwayat TB. Performa diagnostik dibandingkan dalam bentuk proporsi hasil positif, sensitivitas, spesifisitas, nilai duga positif, nilai duga negatif. Hasil: Terdapat total 68 subjek, dengan median usia 34,5 tahun, proporsi lansia 11,76% dan proporsi laki-laki 42,65%. Proporsi hasil positif pemeriksaan IgG spesifik Aspergillus ELISA manual dan ELISA otomatis masing-masing 13,24% dan 48,53%. Pemeriksaan IgG spesifik Aspergillus ELISA manual memiliki sensitivitas 20,83%, spesifisitas 90,91%, nilai duga positif 55,56%, dan nilai duga negatif 67,80%. Pemeriksaan IgG spesifik Aspergillus ELISA otomatis menunjukkan sensitivitas 91,67%, spesifisitas 75%, nilai duga positif 66,67%, dan nilai duga negatif 94,29%. Kesimpulan: Performa diagnostik dan teknis pemeriksaan IgG spesifik Aspergillus ELISA otomatis lebih baik dibandingkan ELISA manual, tetapi pemilihan modalitas diagnosis perlu mempertimbangkan faktor keterjangkauan, aksesibilitas, dan akurasi sesuai kebutuhan dan ketersediaan sumber daya.

.....Introduction: Indonesia has high tuberculosis (TB) burden. The resulting lung damage underlies chronic pulmonary aspergillosis (CPA) development. CPA is diagnosed in patients with evidence of Aspergillus involvement as one of its criteria. Taking into account the limitations of culture, ELISA antibody detection becomes alternative modality. This study aims to compare diagnostic performance between manual and automated ELISA for Aspergillus-specific IgG in patients with treated TB. Method: This cross-sectional study compares Aspergillus-specific IgG test using Bordier manual ELISA and Immulite automated ELISA on sera from patients with treated TB. Diagnostic performance was compared in positive test proportion, sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV). Result: There are 68 subjects, with median age of 34,5 years, elderly subjects proportion of 11,76%, male proportion of 42,65%. Positive results proportion from Aspergillus-specific IgG manual and automated ELISA are 13,24% and 48,53%, respectively. Manual ELISA shows 20,83% sensitivity, 90,91% specificity, 55,56% PPV, 67,80% NPV. Automated ELISA shows 91,67% sensitivity, 75% specificity, 66,67% PPV, 94,29% NPV. Conclusion: Technical and diagnostic performance of automated ELISA Aspergillus-specific IgG test is better than manual ELISA, but choosing diagnostic modality needs consideration on factors such as

affordability, accessibility, and accuracy according to the needs and available resources.