

# Perbandingan Hasil Pemeriksaan Immunodiffusion Test (IDT) Aspergillus dengan IgG Spesifik Aspergillus pada Pasien Bekas TB di RSUP Persahabatan, Jakarta = Comparison of Immunodiffusion Test (IDT) Aspergillus to Aspergillus-specific IgG ELISA in Previous TB Patients at Persahabatan General Hospital, Jakarta

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## Abstrak

Latar belakang: Tuberkulosis paru (TB) merupakan salah satu faktor risiko terjadinya aspergillosis paru kronik (APK). Keduanya sulit dibedakan karena gejala APK tidak spesifik dan mirip dengan TB. Diagnosis APK ditegakkan berdasarkan gejala klinis, pemeriksaan pencitraan dan laboratorium mikologi. Pemeriksaan serologi dengan metode presipitasi atau Immunodiffusion test (IDT) sudah dikembangkan sejak lama, murah dan mudah dilakukan, tetapi dianggap kurang akurat. Pemeriksaan deteksi antibodi immunoglobulin G (IgG) spesifik Aspergillus dengan metode enzyme-linked immunosorbent assay (ELISA) merupakan salah satu metode diagnosis APK. Metode ini cukup mahal dan belum dilakukan rutin di daerah dengan sumber daya terbatas. Tujuan: Penelitian ini bertujuan untuk mengetahui perbandingan hasil pemeriksaan IDT Aspergillus dengan pemeriksaan IgG spesifik Aspergillus pada pasien bekas TB di RSUP Persahabatan. Metode: Penelitian dengan desain uji diagnostik ini dilakukan sejak April 2019 – November 2020 dengan metode consecutive sampling. Pasien yang direkrut merupakan pasien bekas TB dari RSUP Persahabatan Jakarta. Pemeriksaan IDT dan IgG spesifik Aspergillus dilakukan di Laboratorium Departemen Parasitologi FKUI.

Hasil: Dari 80 pasien bekas TB di RSUP Persahabatan sesuai kriteria inklusi, sebanyak 57 pasien laki-laki (71,3%) dan 23 pasien perempuan (28,7%). Rerata usia pasien adalah  $50,98 \pm 2,79$  tahun, median indeks massa tubuh pasien sebesar (IMT) 18,37. Proporsi hasil pemeriksaan IDT pada pasien bekas TB adalah 36,25%, sedangkan IgG spesifik Aspergillus metode ELISA sebesar 48,75%. Nilai akurasi diagnostik IDT dibandingkan terhadap IgG spesifik Aspergillus metode ELISA menunjukkan sensitivitas 30,77%, spesifisitas 58,54%, nilai prediktif positif 41,38%, nilai prediktif negatif 47,06% dan nilai measurement of agreement dengan cohen's kappa sebesar -0,108.

Simpulan: Metode IDT memiliki akurasi lebih rendah dibandingkan IgG spesifik Aspergillus metode ELISA, sehingga penggunaan IgG spesifik Aspergillus lebih direkomendasikan. Teknik IDT dapat digunakan jika sumber daya terbatas, namun perlu dilakukan standarisasi antigen untuk pemeriksaan tersebut.

.....Background: Lung Tuberculosis (LTB) is a risk factor of developing chronic pulmonary aspergillosis (CPA). Both diseases are still difficult to differentiate because clinical presentation of CPA is not specific and similar to LTB. Diagnosis of CPA is confirmed by clinical presentation, radiographic examination and mycology laboratory tests. Serological testing using the precipitation method or immunodiffusion test (IDT) has long been conducted. It is a cheap and easy-to-do method, however the accuracy is not satisfied. Detection of the Aspergillus specific immunoglobulin G (IgG) using enzyme-linked immunosorbent assay (ELISA) is one of the keys in diagnosing CPA. However, this method is more expensive and has not been conducted routinely in areas with limited resources. Aim: This study aimed to determine the results of IDT

Aspergillus compare to Aspergillus-specific IgG with ELISA in previous TB patients at Persahabatan Hospital. Method: This diagnostic study was conducted from April 2019 – November 2020 and recruitment was performed by consecutive sampling. Patients recruited were previous TB patients from Persahabatan General Hospital; while IDT and specific Aspegillus IgG tests were conducted at Laboratory of Parasitology Dept, FMUI. Conclusion: From 80 previous TB patients from the Persahabatan Hospital that met the inclusion criteria, 57 patients were male (71,3%) and 23 were female (28,7). Mean age was  $50,98 \pm 2,79$  years, median of patients body mass index (BMI) was 18,37. The proportion of old TB patients with positive IDT results was 36,25% and patients with positive IgG results was 48,75%. The diagnostic accuracy of IDT compared to IgG ELISA was 30,77% sensitivity, 58,54% spesificity, 41,38% positive predictive value, 47,06% negative predictive value and the measurement of agreement using cohen's kappa was -0,108. Summary: IDT Aspergillus is less accurate compared to Aspergillus-specific IgG ELISA. Therefore the use of Aspergillus-specific IgG ELISA is recommended as a serological test. The IDT method can be used at limited resources facilities, but it is necessary to standardize the antigen for the test.