

Deteksi IgG Spesifik Aspergillus Metode Imunokromatografi Dikaitkan Dengan Karakteristik Klinis Dan Radiologis Aspergilosis Paru Kronik Pada Pasien Terkait Tuberkulosis Paru = Correlation Of Aspergillus Specific IgG Detection By Immunochromatographic Method With Clinical And Radiological Characteristics Of Chronic Pulmonary Aspergillosis In Tuberculosis-Related Patients

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Abstrak

Latar belakang: Aspergilosis paru kronik (APK) merupakan penyakit paru destruktif yang bersifat progresif terutama disebabkan infeksi *Aspergillus fumigatus*. Penyakit ini dapat menjadi komplikasi infeksi tuberkulosis (TB) dan menyebabkan morbiditas serta mortalitas signifikan. Diagnosis APK masih menjadi tantangan karena gejala klinis tidak khas, serta belum ada alat diagnosis yang cepat dan akurat. Deteksi IgG *Aspergillus* berbasis lateral flow assay (LFA) menggunakan metode imunokromatografi (ICT) merupakan uji cepat dan sederhana untuk membantu diagnosis APK. Penelitian ini bertujuan untuk mengetahui hubungan uji ICT *Aspergillus* dengan karakteristik klinis dan radiologis APK pada pasien terkait TB paru. Metode: Penelitian berdesain potong lintang ini dilaksanakan pada April 2019-Juli 2023 dan merupakan bagian dari penelitian sebelumnya tentang diagnosis APK di Indonesia. Serum pasien APK diperiksa di Laboratorium Mikologi Departemen Parasitologi FKUI untuk deteksi ICT *Aspergillus*, kemudian dilanjutkan dengan analisis hasil penelitian.

Hasil: Sebanyak 29 dari 54 (54%) serum pasien yang diteliti menunjukkan hasil uji ICT *Aspergillus* positif. Proporsi jenis kelamin perempuan (63%) lebih banyak dibandingkan laki-laki, sedangkan usia terbanyak 30-60 tahun (74%). Gejala klinis terbanyak adalah fatigue (57%), batuk 3 bulan (42%), hemoptisis (41%) diikuti sesak napas (24%), dan nyeri dada (20%). Adapun penyakit penyerta terbanyak adalah diabetes melitus (20%), penyakit kardiovaskular (11%), dan PPOK (9%). Gambaran radiologi paling dominan adalah kavitas (94%), diikuti infiltrat (72%), dan penebalan pleura (55%). Analisis statistik menunjukkan kaitan bermakna antara hasil ICT *Aspergillus* positif dengan gambaran radiologi berupa infiltrat, fibrosis parakavitas, fibrosis, efusi pleura, konsolidasi dan bronkiektasis ($p < 0,005$). Hasil ICT *Aspergillus* tidak menunjukkan kemaknaan statistik dengan karakteristik klinis.

Simpulan: Deteksi IgG spesifik *Aspergillus* metode ICT pada 54 pasien APK pada penelitian ini menunjukkan hasil positif 54%. Pada penelitian ini hasil ICT *Aspergillus* menunjukkan kaitan bermakna secara statistik dengan gambaran radiologi, tetapi tidak menunjukkan kaitan bermakna dengan karakteristik klinis pasien.

.....Background: Chronic pulmonary aspergillosis (CPA) is a progressive, destructive lung disease mainly caused by *Aspergillus fumigatus* infection. The disease can be a complication of tuberculosis (TB) infection and cause significant morbidity and mortality. Diagnosis of CPA is still challenging because the clinical symptoms are not typical, and there are no fast and accurate diagnostic tools. Detection of IgG-specific *Aspergillus* using the immunochromatography (ICT) method is a quick and simple test to assist CPA diagnosis. The study aimed to determine the correlation between the ICT *Aspergillus* test and the clinical and radiological characteristics of CPA in TB-related patients.

Method: This cross-sectional study was carried out in April 2019-July 2023 and was part of a previous study on CPA diagnosis in Indonesia. All sera of CPA patients were examined at the Clinical Parasitology Laboratory, Faculty of Medicine Universitas Indonesia for ICT Aspergillus detection, followed by analysis of the study results.

Result: Twenty-nine of the 54 patient sera showed positive results of ICT Aspergillus. There were more female (76%) than male patients, with the majority aged 30–60 years (74%). The most common clinical symptoms were fatigue (57%), cough 3 months (42%), hemoptysis (41%), shortness of breath (24%), and chest pain (20%). The most common comorbidities were diabetes mellitus (20%), cardiovascular diseases (11%), and COPD (9%). The dominant of radiological features were cavities (94%), followed by infiltrates (72%), and pleural thickening (55%). The statistical analysis showed a significant correlation between positive ICT Aspergillus results and radiological features, including infiltrates, paracavity fibrosis, fibrosis, pleural effusion, consolidation, and bronchiectasis. However, the ICT Aspergillus did not show statistical significance with clinical characteristics.

Conclusion: The ICT Aspergillus detection in this study showed positive results of 54%. There was a significant correlation between ICT Aspergillus positive result with radiology features, but no significant correlation with clinical characteristics.