

## Karakteristik klinis, profil imunoglobulin-g spesifik aspergillus dan prevlens aspergilosis paru kronik pada pasien bekas tb di beberapa Rumah Sakit di Jakarta = clinical characteristics, aspergillus-specific immunoglobulin-g detection and the prevalence of chronic pulmonary aspergillosis in prior tb patients at several hospitals in Jakarta

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### Abstrak

Latar Belakang: Aspergilosis paru kronik (APK) dapat menjadi komplikasi infeksi tuberkulosis (TB) paru yang telah diobati. Gejala klinis APK dengan TB paru sangat mirip, sehingga sulit dibedakan. Diagnosis APK ditetapkan sesuai konsensus berdasarkan gejala klinis, hasil pemeriksaan radiologi dan laboratorium mikologi. Pemeriksaan antibodi dengan imunoglobulin G (IgG) spesifik Aspergillus menggunakan metode Enzyme-linked immunosorbent assay (ELISA) dapat membantu diagnosis APK. Penelitian ini bertujuan untuk mengetahui karakteristik klinis, profil IgG spesifik Aspergillus, serta prevalensi APK pada pasien bekas TB di beberapa rumah sakit di Jakarta.

Metode: Penelitian prospektif dengan desain potong lintang ini dilakukan pada April 2019 - Februari 2020. Pemilihan subjek dilakukan dengan metode consecutive sampling. Subjek merupakan pasien bekas TB yang berasal dari poli rawat jalan dan rawat inap Rumah Sakit Umum Pusat Rujukan Respirasi Persahabatan Jakarta dan Rumah Sakit Graha Permata Ibu. Pemeriksaan IgG spesifik Aspergillus dan biakan sputum jamur dilakukan di Laboratorium Departemen Parasitologi FKUI.

Hasil: Dari 97 pasien yang sesuai dengan kriteria penerimaan, 66 pasien (68%) berjenis kelamin laki-laki dan rerata usia  $51,8 \pm 13,6$  tahun. Gejala klinis lebih dari 3 bulan yang dilaporkan berupa mudah lelah (38,4%), sesak napas (34,02%), batuk (30,93%), hemoptisis (27,84%), penurunan berat badan (23,71%), dan nyeri dada (19,6%). Gambaran radiologi terkait APK berupa ektasis (57,8%), kavitas (27,8%), penebalan pleura (26,8%), fibrosis parakavitas (18,6%), dan bola jamur (6,2%). Hasil pemeriksaan IgG spesifik Aspergillus positif dilaporkan pada 51 pasien (52,6%), sedangkan biakan sputum jamur Aspergillus didapatkan pada 43 pasien (44,3%). Berdasarkan analisis hasil-hasil pemeriksaan tersebut, diagnosis APK ditegakkan pada 28 pasien (28,9%).

Kesimpulan: Profil IgG spesifik Aspergillus pada 97 pasien bekas TB dalam penelitian ini menunjukkan hasil positif pada 51 pasien (52,6%). Gejala klinis lebih dari 3 bulan yang dilaporkan berupa batuk lama, hemoptisis, penurunan berat badan, mudah lelah, dan sesak napas. Gambaran radiologi terkait APK berupa ektasis, kavitas, penebalan pleura, fibrosis parakavitas, dan bola jamur. Prevalensi APK berdasarkan hasil-hasil pemeriksaan tersebut adalah 28,9%.

.....Introduction: Chronic pulmonary aspergillosis (CPA) might become a complication of pulmonary tuberculosis (TB) that has been treated. The clinical symptoms of CPA can resemble with PTB, making it difficult to distinguish. The diagnosis of CPA is determined by the consensus based on clinical symptoms,

radiological features, and mycological results. Antibody detection with Aspergillus-specific immunoglobulin G (IgG) using the Enzyme-linked immunosorbent assay (ELISA) method can contribute to CPA diagnosis. This study aims to determine the clinical characteristics, Aspergillus-specific IgG detection, and the prevalence of CPA in prior TB patients at several hospitals in Jakarta.

**Method:** This prospective cross-sectional study was conducted in April 2019 - February 2020. Patients recruitment was carried out by consecutive sampling method. Subjects were prior TB patients at Persahabatan National Respiratory Referral Hospital and Graha Permata Ibu Hospital. Detection of Aspergillus-specific IgG and fungal cultures from sputum were carried out in the Laboratory of the Parasitology Department, FMUI.

**Results:** Of 97 patients recruited according to inclusion criteria, 66 patients (68%) were male and the mean age was  $51.8 \pm 13.6$  years. The clinical symptoms of more than 3 months were fatigue (38.4%), shortness of breath (34.02%), cough (30.93%), hemoptysis (27.84%), weight loss (23, 71%), and chest pain (19,6%). Radiological features associated with CPA were ectasis (57.8%), cavity (27.8%), pleural thickening (26.8%), para-cavitary fibrosis (18.6%), and fungal ball (6.2%). The Aspergillus-specific IgG positive were reported in 51 patients (52.6%), whereas Aspergillus sputum cultures were found in 43 patients (44.3%). Based on the analysis of those examinations, the diagnosis of CPA was determined in 28 patients (28.9%).

**Conclusion:** The detection of Aspergillus-specific IgG in 97 prior TB patients showed the positive results in 51 patients (52.6%). The clinical symptoms more than three months were fatigue, shortness of breath, cough, hemoptysis, and weight loss. The radiological features related to CPA were ectasis, cavitory lesions, pleural thickening, paracavitary fibrosis, and fungal ball. The prevalence of CPA based on those examinations was 28.9%.