

ABSTRACT
COMPARISON OF SERUM ADENOSINE DEAMINASE LEVELS IN
PATIENTS NEW CASES OF PULMONARY TB GENEXPERT
MYCOBACTERIUM TUBERCULOSIS DETECTED AND
HEALTHY PEOPLE

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Background

Delay in the diagnosis of pulmonary tuberculosis (TB) increase the transmission of infection and the risk of death. The limitation of examination method results in difficulty to detect and diagnose TB early, so new methods which are faster, more accurate, inexpensive and able to perform using easily obtained samples such as blood serum were needed. Adenosine deaminase (ADA) is an enzyme which is involved in purine metabolism, functionate for the proliferation and differentiation of lymphoid cells and helps the maturation of monocytes into macrophages. There were limited research that study about ADA serum to establish the diagnosis of TB. This study aims to determine the comparison between ADA serum level in new cases of pulmonary TB patients with geneXpert result Mtb detected with healthy people, and also study about the potential of ADA serum as a tool to diagnose pulmonary TB.

Methods

This was an observational analytic study with cross sectional design conducted at the MDR-DOTS TB polyclinic of Dr. Soetomo Hospital. Subjects were divided into new cases of pulmonary TB patients with geneXpert Mtb detected, and healthy people which met the inclusion and exclusion criteria. A total of 60 subjects were enrolled, consist of 34 new cases of pulmonary TB patients with geneXpert Mtb detected and 26 healthy people.

Results

The results of this study showed that new cases of pulmonary TB patients with geneXpert Mtb detected have significantly higher ADA serum levels than healthy people, with a p value of <0.001. Cut-off value of ADA serum levels to diagnose the pulmonary TB was 11.4 U / L with sensitivity level of 85.3% and specificity of 84.6%. Significant differences were found in ADA serum levels according to age group and gradation of Mtb findings from geneXpert examination in pulmonary TB patients.

Conclusion

ADA serum levels in new cases of pulmonary TB patients with geneXpert Mtb detected were higher than healthy people.

Keywords: New cases pulmonary TB of geneXpert Mtb detected, healthy people, serum ADA.

ABSTRAK

PERBANDINGAN KADAR *ADENOSINE DEAMINASE* SERUM PADA PENDERITA TB PARU KASUS BARU *GENEXPERT MYCOBACTERIUM TUBERCULOSIS DETECTED* DAN ORANG SEHAT

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Latar Belakang

Keterlambatan penegakan diagnosis Tuberkulosis (TB) paru berisiko meningkatkan transmisi penularan infeksi dan meningkatkan risiko kematian. Keterbatasan pemeriksaan mengakibatkan semakin sulit mendeteksi dan mendiagnosis TB secara dini, sehingga perlu metode baru yang lebih cepat, akurat, murah dan menggunakan sampel yang mudah didapat seperti serum darah. *Adenosine* deaminase (ADA) merupakan enzim yang terlibat dalam metabolisme purin, berfungsi untuk proliferasi dan diferensiasi sel limfoid dan membantu pematangan monosit menjadi makrofag. Namun masih terbatas penelitian yang menggunakan ADA serum untuk menegakkan diagnosis TB. Penelitian ini bertujuan untuk mengetahui perbandingan kadar ADA serum pada penderita TB paru kasus baru *geneXpert Mtb detected* dengan orang sehat dan mengkaji potensi ADA serum sebagai alat menegakkan diagnosis TB paru.

Metode

Penelitian ini merupakan penelitian analitik observasional dengan rancang penelitian *cross sectional* yang dilakukan di poli TB/TB-MDR-DOTS RSUD Dr. Soetomo. Subyek penelitian adalah penderita TB paru kasus baru *geneXpert Mtb detected* dan orang sehat yang memenuhi kriteria inklusi dan eksklusi. Total sebanyak 60 pasien terbagi 34 pasien TB paru kasus baru *geneXpert Mtb detected* dan 26 orang sehat.

Hasil

Hasil penelitian ini menunjukkan bahwa penderita TB paru kasus baru *geneXpert Mtb detected* memiliki kadar ADA serum lebih tinggi dibandingkan orang sehat secara bermakna dengan nilai p sebesar <0.001 . Nilai *cut off* kadar ADA serum untuk mendiagnosis TB paru didapatkan sebesar 11,4 U/L dengan tingkat sensitivitas sebesar 85,3% dan spesifisitas 84,6%. Perbedaan bermakna didapatkan pada kadar ADA serum berdasarkan kelompok umur dan gradasi temuan *Mtb* dari pemeriksaan *geneXpert* pada pasien TB paru.

Kesimpulan

Kadar ADA serum pada penderita TB paru kasus baru *geneXpert Mtb detected* lebih tinggi dibandingkan orang sehat.

Kata kunci: TB Paru kasus baru *geneXpert Mtb detected*, orang sehat, ADA serum.