

Diagnostic value of serum Adenosine deaminase and its isoenzymes in the diagnosis of pulmonary tuberculosis

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Abstract

Background & Objective: Adenosine deaminase is an enzyme which catalyses adenosine to Inosine. The determination of adenosine deaminase in body fluids is important for the diagnosis of tuberculosis. There are contradictory reports about the diagnostic value of serum adenosine deaminase in pulmonary tuberculosis. This study was set up to investigate the diagnostic value of serum adenosine deaminase and its isoenzymes activities on pulmonary tuberculosis.

Materials & Methods: In this descriptive study, blood samples were obtained from 26 pulmonary tuberculosis patients (group 1), 17 suspected tuberculosis with negative in both smear and culture tests (group 2), and 67 healthy subjects (group 3). Total ADA and ADA2 determination was carried out by kinetic method and EHNA Inhibitor, respectively.

Results: ADA and ADA2 activities are as follow: 19.35±5.04, 13.35±5.34 (group 1); 17.24±6.20, 11.47±3.92 (group 2) and 13.96±4.25, 7.36±2.91 (group 3). The mean differences of ADA and ADA2 activity between group 1 and 2 with group 3 was meaningful. The sensitivity and specificity for ADA and ADA2 tests were (26.9%, 94 %) and (50%, 97 %) respectively. The PPV for ADA and ADA2 were 63.6% and 86.7% and the NPV were 76.8% and 83.3%, respectively.

Conclusion: This study indicated that the assessment of these enzymes in serum to some extent can be a useful method for differentiation of healthy subjects from respiratory disease, but these tests do not have enough sensitivity to assist in the diagnoses of tuberculosis patients from other respiratory diseases.

Key Words: Tuberculosis, Adenosine deaminase, ADA2, Sputum culture

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