

# DIAGNOSTIC UTILITY OF ADENOSINE DEAMINASE (ADA) ACTIVITY IN PLEURAL FLUID AND SERUM OF TUBERCULOUS AND NON-TUBERCULOUS RESPIRATORY DISEASE PATIENTS

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**Abstract.** Adenosine deaminase activity (ADA) was assayed in pleural fluid and serum of 42 subjects with pleural effusion. Twenty-nine of them had TB pleural effusion and the remaining 13 had pleural effusion due to non-TB respiratory diseases. Serum adenosine deaminase activity were also measured in 32 pulmonary tuberculosis patients without pleural effusion and equal numbers of healthy controls without systemic diseases for comparative analysis. The patients attending the medicine out-patient department (MOPD) of the B. P. Koirala Institute of Health Sciences, Dharan, Nepal were taken as study subjects. Serum and pleural fluid ADA activities were assayed spectrophotometrically by the method of Guisti and Gallanti. The mean serum ADA activity was significantly increased in patients with tubercular pleural effusion ( $34.53 \pm 10.27$  IU/l) compared to pulmonary tuberculosis patients without pleural effusion ( $26.54 \pm 4.76$  IU/l), ( $p=0.004$ ), those with non-TB respiratory disease ( $16.71 \pm 5.16$  IU/l), ( $p=0.0001$ ) and healthy controls ( $15.53 \pm 4.4$  IU/l) ( $p=0.0001$ ). The mean ADA in the pleural fluid of tubercular pleural effusion patients ( $90.29 \pm 54.80$  IU/l) was significantly higher compared to those with non-TB respiratory disease ( $24.43 \pm 9.28$  IU/l) ( $p=0.0001$ ). Using the lowest cutoff value for enzyme activity in the serum of patients with TB pleural effusion (25 IU/l), a test sensitivity of 72.41% and specificity of 81.53% were obtained. Using the lowest cutoff value for enzyme activity in pleural fluid of patients with TB pleural effusion (45 IU/l) the sensitivity and specificity for diagnosis were 76.10% and 100%, respectively. Therefore, the measurement of ADA in tubercular pleural effusion has a utility in the diagnosis of tuberculosis when other clinical and laboratory tests are negative.

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