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Diagnostic Accuracy of Ascitic Fluid IFN-gamma and Adenosine Deaminase Assays in the Diagnosis of Tuberculous Ascites

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Abstract

In this study, we evaluated the diagnostic accuracy and cost-effectiveness of ascitic fluid interferon-gamma (IFN-gamma) and adenosine deaminase (ADA) assays in the diagnosis of tuberculous ascites. Ascitic fluid from patients with proven tuberculosis (TB) (n = 31) and non-TB ascites (n = 88) was analyzed for IFN-gamma and ADA levels. Areas under the receiver operative characteristic (ROC) curves (AUCs) for the two biologic markers were compared. Levels of ascitic fluid IFN-gamma, median (range): 560 (104-1600) pg/mL vs. 4.85 (0-320) pg/mL ($p < 0.001$), and ADA, median (range): 58 (16-331) IU/L vs. 10 (0-59) IU/L ($p = 0.001$), were significantly different between TB and non-TB groups. IFN-gamma and ADA assays showed equal sensitivity (0.97) and differed marginally in specificity (0.97 vs. 0.94). Difference in AUCs was not significant (0.99 vs. 0.98, $p < 0.62$). For differentiating TB from non-TB ascites, optimal cutoff points were 112 pg/mL for IFN-gamma and 37 IU/L for ADA. The accuracy of the ADA assay was similar to that of the IFN-gamma assay in differentiating of TB from non-TB ascites. Because both material and human costs of the ADA assay are far less than those of the IFN-gamma assay, the former is probably the most appropriate diagnostic test for analysis of peritoneal fluid in resource- limited settings.