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Diagnostic Accuracy of Ascitic Fluid IFN- γ 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- γ (IFN- γ) 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- γ and ADA levels. Areas under the receiver operative characteristic (ROC) curves (AUCs) for the two biologic markers were compared. Levels of ascitic fluid IFN- γ , 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- γ 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- γ and 37 IU/L for ADA. The accuracy of the ADA assay was similar to that of the IFN- γ 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- γ assay, the former is probably the most appropriate diagnostic test for analysis of peritoneal fluid in resource-limited settings.