Diagnosis of pleural fluid tuberculosis (PF-TB) based on the relation of Pleural Fluid (PF) lactate dehydrogenase (LDH) and Adenosine Deaminase (PF-ADA)

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Introduction

Based on recent studies, biomarkers such as PF/serum LDH ratio > 0.60 and PF-ADA > 40 U/L may be more sensitive than other laboratory tests in the diagnosing of PF-TB. We investigated the utility of such an strategy in an area with an endemic TB.

Methods

We retrospectively reviewed the clinical records of 157 Turkish patients with PF-TB. The diagnosis of PF-TB was based on their clinical history, chest radiograph, sputum/pleural fluid smear/culture in addition to pleural fluid chemistries. A total of 43 patients had PF-ADA and PF/serum LDH measurements and were included in our final analysis.

Results

Patients with confirmed vs. clinical diagnosis of PTB were 78% vs. 22% respectively. All patients fulfilled Light's criteria for exudative pleural effusion.

	Mean	±SD
PF-ADA	56.9	21.6
PF-LDH	1030.1	328.1
Serum LDH	447.6	149.4
PF/serum LDH	2.4	1.5

Patients with a confirmed PF-TB 76.4% had PF-ADA >40 U/L and 97% of patients with confirmed PF-TB had PF/serum LDH ratio > 0.60. In the same cohort, PF/serum LDH ratio > 0.60 was more predictive than PF-ADA > 40 U/L (p=0.0006) in establishing the diagnosis of PF-TB.

Conclusions

This initial data illustrated the possible diagnostic efficacy of PF/serum LDH ratio in diagnosing PF-TB in a TB endemic area. Our ongoing data assessment may provide further evidence about using such a approach in the early diagnosis and possible management of PF-TB.