**Diagnostic Value of Pleural Effusion for Tuberculosis and Malignancy among Referrals to A Tertiary Hospital in Tehran**

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**Abstract**

**Background and aims:** Pleural effusion is a common problem caused by a long list of medical conditions simply from heart diseases to metastatic cancers.We attempted to determine the best noninvasive tests to discriminate between tuberculosis (TB) and malignancy.

**Material and methods:** Through a cross-sectional design, the current study tried to find out the diagnostic value of some common tests for pleural effusion focused on malignancy besides disclosing the frequency and some other characteristics by participating 455 records of referrals in an 8-year period of time between 2009 and 2017.

**Results:** Of the 37 TB records 34 reported lymph dominant and 3 (8.1%) polymorphonuclear leukocytes (PMN) dominant fluid while 121(86.4%) from 140 malignant cases which had WBC count reports were lymph dominant compared with 17 (12.8%) with PMN dominant effusions. The most frequent malignancy was metastatic adenocarcinoma (62.5%) in cytology. Totally 36.4% of the participants had adenosine deaminase (ADA) > 40 U/L containing 23 (62.2%) of 37 TB patients whilst 39 (24.7%) of total 158 malignant cases. Pleural lactate dehydrogenase (LDH) concentration more than 887 U/L had 80% specificity in malignancy diagnosis. Concerning protein gradient and TB/malignancy, 396 (86.8%) patients were available to obtain correlation with malignancy but not with TB.

**Conclusion:** Despite strong needs to more multidisciplinary studies, the present study showed the effectiveness of age, lymph dominant pleural effusion, pleural LDH and protein gradient in malignancy diagnosis on one hand and pleural ADA and albumin gradient in TB on the other hand.

**Keywords:** Pleural Effusion, Tuberculosis, Malignancy, Cytology, Diagnosis