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Title: Analysis of amylase rich pleural effusions

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Body: Background: A rapid evaluation of pleural fluids is needed in differential diagnosis of pleural diseases. Aim: The aim of the study is to analyze the clinical utility of the measurement of pleural amylase levels and pleural fluid/serum amylase ratio in pleural effusions. Material and methods: Totally 115 patients with pleural effusion were enrolled in this prospectively designed study. Pleural fluids and serum samples were analyzed for transudate or exudate classification. Amylase levels were measured in vitro by Roche/Hitachi cobas-c systems in biochemical laboratory. Results: The mean age was 62.2 ± 15.3 and the range of age was between 20 and 94. Of the pleural fluids, 26 (22.6%) were determined as transudate and 89 (77.4%) were as exudate. As a common reason of pleural effusions, 61.5% of the transudates were originated from heart failure and 32.5% of the exudates were originated from lung cancer. The ratio between the serum amylase level and pleural fluid amylase level was not different between transudates and exudates caused by tumors or any other situations. Seven (6.1%) of pleural effusions were amylase rich and 4 of them were tumoral origin, the other 3 of them caused by extratumoral causes. Amylase rich effusions were found as a significant differential factor for malignant effusions ($p=0.028$). Amylase rich pleural fluids were determined more frequently in malignant effusions than paramalignant effusions in the present study ($p<0.05$). Serum and pleural amylase levels and the rate between tumoral or extratumoral disorders were not found as different ($p>0.05$). Conclusion: The predominant reason of amylase rich pleural effusions was malignant diseases and adenocarcinoma was the most common type among the lung cancers.