European Respiratory Society
Annual Congress 2012

Abstract Number: 5054

Publication Number: P1223

Abstract Group: 11.1. Lung Cancer

Keyword 1: Lung cancer / Oncology **Keyword 2:** Mesothelioma **Keyword 3:** No keyword

Title: The clinical effect and expression of alpha-methylacyl-CoA racemace (AMACR) in the differential diagnosis of malign mesothelioma and adenocarcinoma of lung

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Body: Background: Alpha-methylacyl-CoA racemace (AMACR) which is an intracellular enzyme involving in the beta-oxidation of branched fatty acids has emerged as an immunohistochemical marker for many types of cancer. This study is conducted to investigate AMACR expression in the differential diagnosis of malign pleural mesothelioma (MPM) and lung adenocarcinoma, and its correlation with clinical characteristics and survival. Methods: The clinicopathologic characteristics of 144 patients (73 adenocarcinoma, 71 MPM) were reviewed retrospectively. The resection materials were evaluated by immunohistochemical method. The patients who were given adjuvant chemotherapy and/or radiotherapy, with an evidence of residual tumor and who died due to postoperative mortality and due to reasons not related to lung cancer were excluded for survival analysis. Data from remaining 77 patients (37 adenocarcinoma, 40 MPM) were used for survival analysis. Results: AMACR expression was more frequent in adenocarcinoma group than MPM group (p=0,046). The specificity and sensitivity of AMACR immunostaining in detecting adenocarcinoma were %58,9, and %57,7 respectively. AMACR positive and negative groups were similar for age, sex, smoking history, tumor diameter, lymph node involvement, tumoral differentiation, T-N factor, and stage. Overall survival was not significantly different between the groups, either. Conclusion: The specificity and sensitivity of AMACR immunostaining was not high enough to use it as a diagnostic tool in differential diagnosis of MPM and lung adenocarcinoma. AMACR expression did not have a prognostic value in MPM or in adenocarcinoma.