

European Respiratory Society Annual Congress 2012

Abstract Number: 7119

Publication Number: P4164

Abstract Group: 11.1. Lung Cancer

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

Title: Expression of macrophage migration inhibitory factor (MIF) in the serum and lung tissues in patients with non-small cell lung cancer (NSCLC)

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Body: Objective: To study the expression of MIF in the serum and lung tissues of patients with NSCLC. Methods: Eighty-eight patients of the 1st affiliated hospital of Sun Yat-sen university with diagnosis confirmed by pathology were recruited from 2011.10 to 2012.3, including 66 patients with NSCLC (group A) and 22 patients with benign lung lesions (group B). ELISA was done to compare serum MIF level in these two groups and in 30 healthy individuals. Immunohistochemistry(IHC) was done to compare the expression of MIF between group A and B. The relationship between serum MIF level and high expression rate in lung tissues was analyzed. Results: The serum MIF level in group A was significantly higher than healthy control(14.79 Vs 10.69ng/mL, P=0.001), but not significantly higher than group B (14.79 Vs 13.68 ng/mL, P=0.580). Among group A, the serum MIF level in patients with advanced stage (stage III and IV) was significantly higher than those with early stage (stage I and II)(17.53 Vs 10.45ng/mL, P=0.004). The MIF high expression rate in the lung tissues of group A was markedly higher than group B (30.3% Vs 4.5%, P=0.014). Among group A, there was significantly higher MIF expression rate in patients with advanced stage compared with those with early stage (42.1% Vs 14.3%, P=0.015). The serum MIF level had a positive correlation with MIF expression rate in the lung tissues in patients of group A (P<0.05). Conclusions: The serum MIF level had a positive correlation with MIF expression rate in lung cancer tissues. Both of them were helpful for evaluation of the NSCLC clinical stage and histological grade. MIF is a good histological biomarker of NSCLC.