European Respiratory Society
Annual Congress 2012

Abstract Number: 4997

Publication Number: P3154

Abstract Group: 1.5. Diffuse Parenchymal Lung Disease

Keyword 1: Interstitial lung disease **Keyword 2:** Idiopathic pulmonary fibrosis **Keyword 3:** Biomarkers

Title: Hyaluroman syntehase-2 over expression has impact in the evolution and on the prognosis of idiopathic pulmonary fibrosis patients

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Body: Background: The idiopathic pulmonary fibrosis (IPF) is a terminal illness characterized by unremitting extracellular matrix (ECM) deposition. In this regard, the myofibroblasts and the ECM components such as hyaluronan (HA) have an important role in the fibrosis. We analyzed the expression of HAS1 (HA synthase 1), HAS2, HAS3 and hyaluronic acid receptor (CD44) by epithelial and myofibroblasts cells in patients with IPF and we correlated with a survival. Methods: HAS-1, HAS2, HAS3 and CD44 epithelial and myofibroblast expression were evaluated in 27 surgical lung biopsies from patients with IPF in minimal and severe fibrosis by the point-counting technique. Impact of these markers was tested on pulmonary functional tests and follow-up until death from IPF. Results: HAS2 and CD44 expression were significantly increased and directly associated with severe fibrosis. Myofibroblast HAS2 activity was indirectly associated to DLO/VA (r=-0.584; p=0.05). Kaplan Maier curves determined a higher risk of death for patient with high HA2 (>6.83%) expression than in low expression (Log Rank p=0.05).

Conclusion: The increased HAS-2 activity in epithelial and myofibroblast cells have impact in the remodeling process and the survival evolution, suggesting that strategies aimed at preventing the effect of this ECM component may have a greater impact in patient's outcome. Financial Support: FAPESP.