Biomarkers for differential diagnosis of fibrosing diseases of lung

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The differential diagnosis of the most frequent chronic pulmonary interstitial diseases in clinical practice as idiopathic pulmonary fibrosis (IPF), chronic hypersensitivity pneumonitis (NHc) and secondary pulmonary disease collagen-vascular diseases (E-CVD), is a major clinical-morphological-radiological challenge.

OBJECTIVES
To identify proteins associated with epithelial injury and that serve as serum biomarkers for differential diagnosis of chronic interstitial diseases.

METHODS
Four groups with IPF, NHc, E-CVD and controls were identified, prior informed consent, and peripheral blood samples were taken for determining the concentration of biomarkers: matrix metalloprotease-1 (MMP-1), surfactant A protein (SP-A), transforming growth factor-β (TGF-β) and Sonic-Hedgehog by ELISA.

RESULTS
Serum concentrations of Sonic-Hedgehog didn’t show a significant decrease in patients with IPF (1371±1514 versus E-CVD: 1133±703 and NHc: 1192±786 pg/ml; p=0.13). TGF-β is found marginally decreased in IPF compared to E-CVD (447±201 vs 378±211 pg/ml p=0.04) and SP-A compared to NHc and E-CVD (74±30 vs 54±20 pg/ml, 70±50 vs 54±20 p=0.02). MMP-1 showed no difference among the 3 groups.

CONCLUSIONS
In this pilot study we found 2 potential serum biomarkers for differential diagnosis between NHc and IPF and 2 for differential diagnosis between E-CVD and IPF. However, it is necessary to determine cut-off points and perform analysis to test its usefulness as a diagnostic test.