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Title: Measurement of serum proSurfactant protein-B levels – A novel biomarker of an impaired diffusion?

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Body: Rationale: Surfactant Protein-B (SP-B) is an airway specific protein produced by type II pneumocytes. It seems reasonable that it should appear in the peripheral circulation in case of alveolar-capillary membrane damage. We aimed to evaluate the use of proSP-B in patients suffering from dyspnea. Methods: We determined serum proSP-B levels in patients presenting with dyspnea using an electrochemiluminescence immunoassay (Roche Diagnostics, Basel, Switzerland) at days 1, 3 and 7 of the hospital stay. Pulmonary function was evaluated using bodyplethysmography. Impaired diffusion was measured by the diffusing capacity for carbon monoxide corrected for alveolar volume (DLCO/VA). Results: 54 patients were included (27 men), of whom 16 never have smoked. Patients were divided into four classes of diffusion impairment according to ATS/ERS recommendations. Both smokers and non-smokers showed a trend to an increase in proSP-B in higher diffusion classes (see Figure). Statistical significance was reached in non-smokers comparing classes 0 vs. 1 (p=0.02) and in smokers comparing classes 0 vs. 2 (p=0.04) and 1 vs. 2 (p=0.03).

Conclusion: proSP-B levels might be a promising indicator for the damaged alveolar-capillary membrane resulting in an impaired diffusion. Several clinical conditions could be associated with altered serum concentrations. Further investigation might be rewarding to clarify the value in daily clinical routine.