European Respiratory Society
Annual Congress 2012

Abstract Number: 2700

Publication Number: P2224

Abstract Group: 5.2. Monitoring Airway Disease

Keyword 1: Biomarkers **Keyword 2:** Cough **Keyword 3:** Asthma - diagnosis

Title: Laryngopharyngeal pepsin reflux in chest clinic patients with upper airways symptoms

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Body: Introduction: Laryngopharyngeal reflux (LPR) may underlie both chronic cough and vocal cord dysfunction, and one explanation for a lack of response to standard anti-reflux therapy may be the persistence of non-acid-reflux. Salivary pepsin is a potential biomarker for LPR. The aim of this study was to evaluate if the detection of pepsin in saliva was associated with signs of laryngopharyngeal reflux in patients having nasendoscopy for investigation of upper airway symptoms. Methods: We recruited patients from the Airways Clinic requiring nasendoscopy. All patients had the Reflux Finding Score (RFS) recorded at nasendoscopy. Salivary pepsin was quantified with a lateral flow device using monoclonal antibody labelling (Peptest, RD Biomed, UK). Results: Of 20 patients recruited, 12 were confirmed to have VCD and 13 a clinical suspicion of LPR (based on an RFS > 7). Pepsin was detected in the saliva of 11/20 subjects (55%), including 67% of the VCD patients and 61% of those with a high RFS, although 43% of those with a low RFS also had a positive pepsin. Salivary pepsin had a sensitivity of 62% and specificity of 57% for predicting a high RFS. There was no significant correlation between RFS scores and salivary pepsin. Seven of the 10 patients already on treatment for a clinical diagnosis of reflux had a positive pepsin assay. Conclusions: Salivary pepsin was frequently present in patients with upper airway symptoms, and not strongly related to clinical findings of reflux, suggesting a high prevalence of sub-clinical LPR. Further investigation should determine the clinical relevance of this, and whether LPR treatment results in an improvement in pepsin levels and the associated upper airway symptoms.