

subjects with 1, 2 and 3 positive samples during a 24 hour period were 52%, 14% and 14% respectively in IPF patients and 20%, 12% and 4% in control subjects. There was no significant difference in reflux-related quality of life or respiratory quality of life between pepsin positive and pepsin negative patients measured using the REFLUX questionnaire (mean 93.6 ± 2.6 SEM vs 97.8 ± 2.3 , $p = 0.47$) and SGRQ (49.5 ± 3.5 vs 34 ± 11.9 , $p = 0.1$). The HARQ score was significantly higher in pepsin positive patients (23.8 ± 3.3 vs 7.5 ± 3.3 , $p = 0.03$).

Conclusion Salivary pepsin measurement is simple, convenient and acceptable to patients. Our results confirm an increased prevalence of positive salivary pepsin in IPF patients compared to healthy volunteers but demonstrate a marked temporal variability. Therefore, more than one sample or repeated sample collection is required for optimal sensitivity.

S31 PEPSIN DETECTION DESPITE THE USE OF ACID SUPPRESSANT MEDICATION IN PATIENTS WITH AIRWAY REFLUX RELATED CHRONIC COUGH

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Background Chronic cough (CC) is an increasing problem that is not easy to treat with medication. Associated symptoms include hoarse voice, dysphonia, persistent tickling and irritation of the throat or chest. These lead to poor sleeping and eating patterns, loss of vocal independence and social isolation all resulting in an impaired quality of life. Airway reflux is a common cause of unexplained chronic cough and proton pump inhibitor (PPI) medication is commonly prescribed as initial therapy. The following study assessed pepsin identification in CC patients as a marker of airway reflux on PPI.

Methods Symptomatic expectorated saliva samples were obtained from 16 patients (6 male/10 female, 50 years (37–76), Body Mass Index (BMI) 30 (24–44), median (range)) attending clinical appointment with symptoms of chronic cough. Pepsin was identified using the Peptest™ an *in vitro* diagnostic medical device specific for human pepsin A (RD Biomed Ltd, UK). All patients completed the Hull Airways Reflux Questionnaire (HARQ) to determine airway reflux related cough (range 0–70; <13 normal). Patient demographics and medication data was provided on sample collection.

Results Fourteen (88%) of the CC patients were positive for pepsin in saliva samples (median 83ng/ml; range 25–250), providing non-invasive verification of presence of reflux in this CC population. Thirteen pepsin positive patients were symptomatic of airway reflux related cough according to abnormal HARQ score

(median 40; range 25–59) and all were taking PPI (20–60mg/d range collected from referral letter and patient questionnaire). The median BMI of the pepsin positive patients was 30 (range 25–44). **Conclusion** Pepsin was present in 88% of suspected airway reflux related chronic cough patients therefore corroborating the diagnosis of reflux. Airway reflux is associated with unexplained chronic cough in patients receiving PPI highlighting that symptoms and reflux are still present despite acid suppression. Overweight and obese BMI status is a common feature of airway reflux related chronic cough patients. A reconsideration of the empiric use of acid suppression use maybe warranted for unexplained chronic cough.

S32 PEPSIN DETECTION IN EXPECTORATED SALIVA: A USEFUL MARKER FOR AIRWAY REFLUX?

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Introduction Gastro oesophageal reflux (GOR) is a very common cause for chronic cough. The clinical history of airway reflux differs from that of GOR disease and often the diagnosis of airways reflux is not considered. Although oesophageal investigations can support the diagnosis these are invasive, time consuming and expensive. The presence of pepsin in the oesophagus, or more proximally in the pharynx or the airways, suggest GOR. The aim of this study was to study the diagnostic utility of measuring pepsin in expectorated saliva in unselected patients presenting with chronic cough.

Methods Consecutive patients referred to the Hull Cough Clinic were instructed to collect expectorated saliva on three occasions following symptoms (paroxysm of cough). Saliva was collected into tubes containing 0.5 ml of 0.01 M citric acid and analysed for the presence of pepsin using a lateral flow test comprising two unique human monoclonal antibodies to pepsin (Peptest™, RDBiomed Ltd). The cut off value to determine pepsin positivity was 25 ng/ml. Patients also completed the Hull Airways Reflux Questionnaire (HARQ), a validated tool to diagnose airways reflux.

Results 72 patients were included in this study (females 49, mean age 58.3 years). Salivary pepsin assay was positive in at least one sample in 46 (64%). 24, 10 and 12 patients had 1, 2 and 3 positive tests respectively. 10 samples had pepsin levels above 250 ng/ml. For purpose of comparison this data was examined against 300 similar pepsin assays from 100 healthy subjects with no typical or atypical reflux symptoms. In this group only 6 of 300 samples had more than 250 ng/ml of pepsin measured and 64% had all three samples negative for pepsin.¹ This is shown in table 1. The median HARQ score was 30 (range 1–67).

Conclusion A high proportion of patients with chronic cough have demonstrable levels of pepsin in expectorated saliva at the time of having symptoms. This non invasive test may be a useful investigation to support the diagnosis of airway reflux.

Abstract S32 Table 1. Test results for pepsin in patients with chronic cough compared to healthy volunteers

	At least one sample positive	One sample positive	Two samples positive	All three samples positive	All three samples negative	Pepsin level >250 ng/ml
Chronic cough patients	63.9%	33.3%	13.9%	16.7%	36.1%	4.6%
Healthy volunteers	36%	20%	12%	4%	64%	2%