

**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 at Castle Hill Hospital, East Yorkshire. 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.

*Key words: Chronic cough, pepsin, airway reflux, acid suppressants*