

**Use of a non-invasive pepsin diagnostic test for reflux: a series of case studies.**

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**Background:** A non-invasive diagnostic test in the form of a lateral flow test (LFT) specific for pepsin has been shown to be of benefit in the diagnosis of extra-oesophageal reflux (EOR)<sup>1</sup>. This test is able to detect pepsin, as a marker of prior reflux, in the sputum of a patient, particular if experiencing symptoms. To continue the clinical validation of the pepsin LFT a series of interesting patients suspected of suffering from EOR were evaluated.

**Case 1:** Male aged 29 with wheezing set-off by drinking wine. 3 sputum samples were provided after drinking wine (1 asymptomatic, 2 symptomatic). The asymptomatic sample was negative but both symptomatic samples were strongly positive for pepsin.

**Case 2:** Female aged 19 with exercise-induced (running) cough. 3 samples were provided (baseline, post-exercise-cycling, post-exercise-running). Severe symptoms were experienced after running and this sample was positive for pepsin while the others were negative.

**Case 3:** Female aged 18 with chronic cough in which the symptoms worsened at different time points of her menstrual cycle. 2 samples were provided (Day 4 severe symptoms, Day 21 no symptoms). On testing for pepsin the Day 21 sample was negative but the Day 4 sample was positive.

**Case 4:** Male aged 51 with voice disorders due to EOR. Despite PPI therapy (lansoprazole and later esomeprazole) symptoms persisted and an impedance/pH test concluded that reflux still remained. A symptomatic sample showed the presence of pepsin.

**Case 5:** 3 year old girl with persistent regurgitation and suspected reflux. A symptomatic sample was positive for pepsin.

**Conclusion:** The non-invasive pepsin LFT is useful in diagnosing EOR in a wide variety of patients, including paediatrics. We were able to conclude that in all patients in the cases above their symptoms were a consequence of reflux. Pepsin could still be detected with PPI therapy providing further evidence for a role of 'weak-acid' reflux in causing symptoms.

**Reference**

<sup>1</sup>Strugala *et al.* 2007 Gastroenterology 132(4Suppl1):A99-A100