

# DDF 2015 - Abstract Submission

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## DOES SALIVARY PEPSIN MEASUREMENT CHANGE DIAGNOSTIC OUTCOME IN PATIENTS INVESTIGATED BY 24H PH MONITORING?

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**Introduction:** Pepsin, a gastric enzyme, has been proposed as a marker of gastro-oesophageal reflux disease (GORD) when present in saliva<sup>1</sup>. In contrast to routine diagnostic methods, quantification of salivary pepsin is rapid and non-invasive. Furthermore, 24h pH-monitoring has limited sensitivity<sup>2</sup>. We aimed to evaluate the impact of salivary pepsin measurement on diagnosis of GORD in patients undergoing 24h pH-monitoring.

**Method:** Patients referred for 24h pH-monitoring (off medication) were invited to take part in the study. Eligible participants complained of heartburn, regurgitation, chest pain or acid in the mouth and were referred for testing by a gastroenterologist, upper gastrointestinal surgeon or respiratory consultant. Presence of additional atypical symptoms was assessed by questionnaire (Reflux Symptom Index). Patients underwent high resolution oesophageal manometry and catheter-based 24h pH-monitoring. During the monitoring period, participants collected up to three saliva samples at the time of experiencing their predominant symptom(s). Pepsin concentration of samples was quantified using a lateral flow device (Peptest) where at least one sample containing >25ng/ml pepsin was indicative of reflux disease. Diagnostic outcome by pepsin measurement and 24h pH-monitoring (>4.2% of time pH<4 considered diagnostic of GORD) was compared using Fisher's exact test.

**Results:** 100 participants recruited; 80 participants included in final analysis (exclusions: corrupt pH study (n=1), no pepsin samples collected (n=19)). 81% of participants returned at least one positive pepsin sample. 39/80 (49%) patients were classified as having reflux disease based on 24h-pH monitoring (mean %time pH<4: 10.9% vs 1.8% in reflux negative group, p<0.05). Of these, 30/39 (77%) also had positive reflux outcome using pepsin. Of 41 individuals without reflux based on pH-monitoring, 85% had at least one positive pepsin sample. 9 individuals studied were found to have reflux on pH-monitoring, but no evidence of salivary pepsin. Pepsin based reflux outcome was not dependent on the outcome from 24h pH-monitoring (Fisher's exact 2-tailed sig. = 0.398)

**Conclusion:** A higher proportion of the total population was found to have GORD based on pepsin measurement (81% vs 49% using pH), which may reflect the poor sensitivity of 24h pH-monitoring. Measurement of salivary pepsin changed the diagnostic outcome when compared to 24h pH-monitoring in 44% of symptomatic reflux patients. Further studies should explore the relationships between pepsin concentration and symptoms of reflux. This study may support the use of salivary pepsin measurement to prevent false-negative diagnosis based on 24h pH-monitoring alone.

**References:** 1. Hayat JO. et al. Gut 2015; **64**: 373-380

2. Dent J. et al. Gut 2010; **59**: 714-721

**Disclosure of Interest:** A. Rasijeff: None Declared, W. Jackson: None Declared, J. Burke: None Declared, P. Dettmar Shareholder of: RD Biomed Limited