

PWE-087

## PHARYNGEAL AND OESOPHAGEAL DYSMOTILITY AND DYSFUNCTION IN PATIENTS WITH CHRONIC COUGH: ASSESSMENT BY HIGH-RESOLUTION MANOMETRY

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**Introduction** Laryngopharyngeal reflux (LPR) of gastric contents is a cause of chronic cough; however the pathophysiology of this disease remains unclear. Conventional manometry has insufficient spatial resolution for the functional assessment of the pharynx, upper oesophageal sphincter (UOS) and coordination between the proximal and distal oesophageal contractions that clear refluxate from the laryngopharynx and proximal oesophagus. This study applied high resolution manometry (HRM) in patients with chronic cough with and without association to reflux events.

**Methods** Consecutive patients referred for investigation of chronic cough in 2009 were reviewed. Patients with hiatus hernia, severe co-morbidity and previous oesophageal surgery were excluded. Of 66 patients referred, 34 (52%) (21 F:13 M) were eligible. HRM (ManoScan 360, Sierra) with detailed analysis (ManoView 2.0, Sierra) of 10 water swallows was performed followed by 24-h ambulatory pH-monitoring. Of this group 21 patients had negative reflux-cough symptom association probability (SAP; group A) and 13 had positive SAP (group B). Results from 23 healthy controls were available for comparison. A secondary analysis to assess the association of gastro-oesophageal reflux (GOR) disease and motility was performed.

**Results** Mean patient age was 55±15 (19–77). Mean acid exposure time was similar in group A and B (4.9±6.5 vs 3.7±4.0; p=0.34) and a similar proportion had pathologic reflux >4.2% acid exposure/24 h (7/21, 4/13; p=0.198). Moreover there was no significant interaction between the presence of GOR on pH-monitoring and any measurement of pharyngeal or oesophageal motility in this population. There was no significant differences for baseline UOS pressure; however residual UOS intrabolus pressure on 5 ml water swallows was higher in group A and B than controls (−0.34±0.69 and 1.09±0.64 mm Hg vs −4.4±5.8 mm Hg; p<0.018 and p<0.005 respectively).

The percentage of primary peristaltic contractions was lower in group B with reflux associated cough than groups A and C (56% vs 79% and 87%; p=0.03 and p<0.002 respectively). Other motility parameters including pharyngeal contraction, peristaltic coordination and LOS function were similar in all groups.

**Conclusion** Detailed analysis of swallowing and oesophageal motility by HRM revealed changes to UOS and oesophageal function that impair clearance from the pharynx and oesophagus in patients with cough compared to healthy controls. These changes were most marked in patients in whom cough was associated to reflux events. These findings suggest that not only GOR but also impaired clearance of luminal contents from the pharynx and proximal oesophagus contribute to chronic cough.

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**Keywords** GORD, High resolution manometry, laryngopharyngeal reflux, pH monitoring.