

and ambulatory dual channel pH-metry with sensors 5 and 20 cm above the lower oesophageal sphincter. The ResTech Dx-pH sensor was placed in the oropharynx transnasally. The RYAN composite score was generated by the ResTech Dx-pH analysis software. A positive RYAN score would suggest high levels of pharyngeal acid exposure. Patients were stratified into two groups based on the total percentage of time pH<4 detected in the distal channel of pH-metry. Group A had a total percentage of time more than 4.5% and Group B less than 4.5%.

**Results** Five patients were excluded in the analysis due to technical or equipment errors. In Group A (n=16), 50% of the patients had positive RYAN score. The average age of these patients with positive RYAN score was significantly higher ( $58\pm12.5$  vs  $43\pm12.7$  years,  $p=0.0389$ ) compared to patients with negative RYAN score. In Group B (n=17), 47% had positive RYAN score. Their average age was higher ( $55\pm9.4$  vs  $43\pm13.8$  years,  $p=0.0581$ ).

The observed proximal and distal amplitude of oesophageal contractions within the RYAN score subgroups of Group A and B did not differ significantly. However, mid oesophageal contraction amplitude was significantly higher in Group A ( $47\pm25.9$  vs  $22\pm8.1$  mm Hg,  $p=0.04894$ ).

There was no difference in lower oesophageal sphincter (LOS) pressure in between RYAN subgroups in Group A. However, the LOS pressure was significantly lower in patients with positive than negative RYAN score in Group B ( $9\pm2.6$  vs  $14\pm3.9$  mm Hg,  $p=0.01347$ ).

**Conclusion** In this tertiary-referred population with LPR symptoms, almost 50% had significant acidification in the upper airway possibly explaining their symptoms. Poor oesophageal clearance of refluxed acid, reflected in reduced contraction amplitude in the oesophageal body may also play a role. Interestingly, patients with normal distal acidification who have high levels of pharyngeal acid exposure tend to have lower LOS pressure and poor body motility.

**Competing interests** None.

**Keywords** gastro-oesophageal reflux disease, laryngopharyngeal reflux, oesophageal clearance, ResTech.

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# THE ROLE OF POOR OESOPHAGEAL CLEARANCE IN PATIENTS WITH SUSPECTED LARYNGOPHARYNGEAL REFLUX

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**Introduction** Laryngopharyngeal reflux (LPR) disease is thought to occur in one-third of gastro-oesophageal reflux disease (GORD) patients. Currently, there is no gold standard investigation for patients with suspected LPR. The ResTech Dx-pH measurement system is reported to be capable of detecting liquid or aerosolized acid reflux in the upper airway, and may be a valid objectifiable measure of LPR. The authors postulated that elevated ResTech Dx-pH results may be related to poor oesophageal clearance of acid.

**Methods** 38 consecutive patients referred for investigations of LPR underwent standard stationary oesophageal manometry