

Original Research Article

Prevalence of laryngopharyngeal reflux in adult population using 24 hours ambulatory dual probe pH monitoring

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ABSTRACT

Background: Laryngopharyngeal reflux disease is an under diagnosed condition due to unavailability of the diagnostic tool that is dual probe pH monitoring and is on the rise in adult population according to El Serag by 4% every year since 1976.

Methods: Adult patients coming to the outpatient department between April 2017 to April 2018 were evaluated using reflux symptom index score (RSI). Score greater than 13 were suggestive of laryngopharyngeal reflux and patients underwent 24 hours ambulatory dual probe pH monitoring. 7 or more reflux events in study period were diagnostic of laryngopharyngeal reflux.

Results: 3000 adult patients were screened for RSI and 1756 (58.3%) had scored greater than 13. Among these patients 893 patients had 7 or more reflux events in pH monitoring. We found a prevalence of 29.76% in our study population.

Conclusions: Prevalence laryngopharyngeal reflux disease needs to be assessed periodically at regular intervals to create more awareness of the disease and patient education thus preventing from causing chronic illnesses.

Keywords: Laryngopharyngeal reflux, pH monitoring, Dual probe, Alkaline reflux, Reflux symptom index

INTRODUCTION

The reflux of gastric contents is a major concern involving the pathology of upper aerodigestive tract. Small amount of the refluxate reach the upper aerodigestive tract while upright during daytime causing damage to the local tissue producing localized symptoms.¹ According to El Serag, the prevalence of reflux disease has increased by 4% every year since 1976.² Reflux is known to have been associated subglottic stenosis, laryngospasm, bronchiectasis, obstructive sleep apnoea and even rhinitis or chronic sinusitis.³

We conducted this study as laryngopharyngeal reflux is growing problem in adult population due to lifestyle changes.

METHODS

It is a prospective study conducted in the department of otorhinolaryngology at Saveetha Medical College and Hospital from April 2017 to April 2018. Adult patients above 18 years of age were included in to the study. Patients below 18 years of age, critically ill patients and those taking anti reflux medications for the past 1month were excluded from the study. Patients included in to the study were now evaluated using reflux symptom index to assess laryngopharyngeal reflux in the same. Reflux symptom index if greater than 13 was suggestive of laryngopharyngeal reflux according to Belafsky et al and those patients were counselled to do ambulatory 24 hours dual probe pH monitoring.⁴ Informed consent was obtained. Patient was prepped with 4% xylocaine intranasally, dual probes 10 cms apart was used. The

probe was placed under endoscopic guidance, proximal probe at upper oesophageal sphincter and distal probe approximately 5 cms from lower oesophageal junction. Carbonated and caffeinated beverages were restricted during the study. Laryngopharyngeal reflux events were defined as an abrupt proximal electrode pH drop to less than 4. Patients having 7 or more reflux events per 24 hours of the study period in proximal electrode were diagnosed having laryngopharyngeal reflux as described by Vincent et al.⁵

RESULTS

There were 3000 patients enrolled during the study period. Males were 1953 and females were 1047. Age ranged from 18 years to 50 years. The mean age of the population was 28.7. Among the study population 1756 patients (58.53%) had reflux finding scores above 13 which was suggestive of having laryngopharyngeal reflux. Among these 1756 patients, 893 patients had more than 7 acid reflux events at the proximal electrode on dual probe pH monitoring and were diagnosed with laryngopharyngeal reflux. 11 patients had alkaline reflux recorded. In this study we found that 29.76% of the study population of 3000 were suffering from laryngopharyngeal reflux disease.

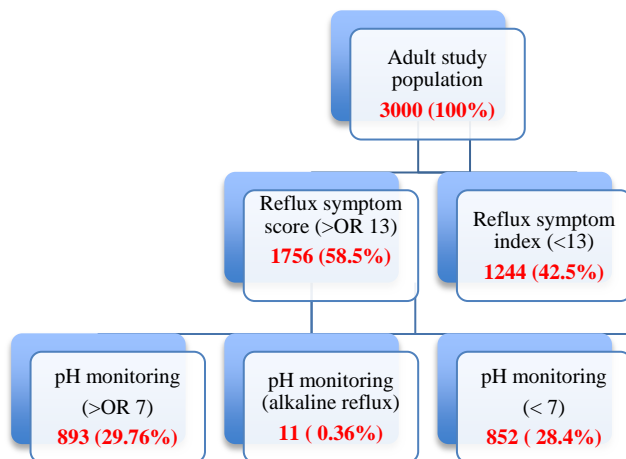


Figure 1: Observations of the study.

DISCUSSION

The throat is protected from damage of the stomach refluxate by esophageal peristalsis, saliva, gravity and upper/lower oesophageal sphincter. When these barriers fail the laryngeal mucosa come in contact with the stomach refluxate and its first line of protection of the laryngeal mucosa is carbonic anhydrase type 3 which place a part in acid base balance of the mucosa.¹ pH of the pharynx is neutral (7 pH) were as that of the stomach is (1.5-2 pH). Koufman suggested that laryngopharyngeal reflux disease (LPR) and gastric oesophageal reflux disease (GERD) were separate entities.⁶ In his study he found that throat clearing was seen in 87% of LPR

whereas only 3% in GERD and only 20% in LPR had heart burn when compared to 83% in GERD.

Twenty four hours ambulatory pH monitoring has been the gold standard in diagnosing laryngopharyngeal reflux disease. Studies have shown that a combination of reflux symptom index and pH monitoring have better rates identifying patients of potential response to proton pump inhibitors treatment.⁴

In our study, we found 11 patients with alkaline reflux. Non acid reflux has been associated with inflammation of larynx which is caused by pepsin and bile salts.⁷ Koufman suggested that pepsin deposited in the laryngeal tissue can be activated by hydrogen ions derived from our diet.⁶ An experimental study done showed that bile salts are more damaging to the mucosa at an acidic pH.⁸

CONCLUSION

Laryngopharyngeal reflux disease under diagnosed and a growing problem in adult population. The prevalence is known to increase by 4% every year. So it's necessary for more studies at regular intervals to assess the growing disease condition. It's needed to find association of this disease to other problems in the aerodigestive tract including its association in causing malignancy. The general population need to be educated and treated for laryngopharyngeal reflux disease.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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