

ASSESSMENT OF LARYNGOPHARYNGEAL REFLUX BY USING 24 HOURS AMBULATORY DUAL PROBE PH MONITORING AT TERTIARY CARE CENTRE

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ABSTRACT

Background: Patients who diagnosed with gastroesophageal reflux disease also had variety of other symptoms related to the upper aerodigestive tract. Acid reflux is reported to be common problem among 5–11% of patients attending otorhinolaryngology outpatient departments. Gastroesophageal reflux disease is characterized as the retrograde reflux of gastric contents in esophagus or above. **Material & Methods:** The present prospective study was conducted at department of otorhinolaryngology of our tertiary care hospital. The study was an observational study conducted during a period of one year. Adult patients above 18 years of age were enrolled by simple random sampling. Patients who were critically ill and those taking medications for anti-reflux from the past 1 month were excluded from the study. **Results:** In the present study, out of the total study participants, 61% patients had laryngopharyngeal reflux finding scores above 13 which was diagnostic of having laryngopharyngeal reflux disease. Among these 66% patients with laryngopharyngeal reflux, 31% patients had more than 7 laryngopharyngeal reflux events in 24 hours at the proximal electrode on the assessment with dual probe pH monitoring. Hence, these patients were diagnosed with laryngopharyngeal reflux disease. **Conclusion:** Laryngopharyngeal acid reflux gastric contents is a major factor associated with various range of laryngeal as well as pharyngeal symptoms such as a burning sensation of the substernal epigastric region, change of voice, throat pain, regurgitation, dysphagia, cough, frequent throat clearing and foreign-body sensation in the throat.

Key words: Laryngopharyngeal reflux, pH monitoring, Reflux symptom index

INTRODUCTION

Patients who diagnosed with gastro-esophageal reflux disease also had variety of other symptoms related to the upper gastrointestinal tract (1). Acid reflux is reported to be common problem among 5–11% of patients attending otorhinolaryngology outpatient departments. Gastro-esophageal reflux disease is characterized as the retrograde reflux of gastric contents in esophagus or above. In previous studies it was reported that the gold standard for the diagnosis of GERD is direct 24-hour pH monitoring in the esophagus (2).

Otolaryngological manifestations of gastroesophageal acid reflux include a various range of laryngeal as well as pharyngeal symptoms such as burning sensation of the sub sternal epigastric region, change of voice, throat pain, regurgitation,

dysphagia, cough, frequent throat clearing and foreign-body (3). The laryngo-pharyngeal acid reflux gastric contents is a major factor associated with the changes in the pathology of upper aerodigestive tract. Small amount of the gastroesophageal acid reflux when reach the upper aerodigestive tract reported to be causing damage to the local surrounding tissue responsible for localized symptoms. In previous studies, the incidence of laryngo-pharyngeal acid reflux has reported to increase in frequency year by year. The laryngopharyngeal acid reflux is reported to be responsible for etiopathogenesis of subglottic stenosis, laryngospasm, obstructive sleep apnoea, bronchiectasis, chronic sinusitis and rhinitis (4). We conducted present study to assess the laryngopharyngeal reflux by using 24 hours

ambulatory dual probe pH monitoring at tertiary care centre.

MATERIALS & METHODS

The present prospective study was conducted at department of otorhinolaryngology of our tertiary care hospital. The study was an observational study conducted during a period of one year. A sample size was calculated at 95% confidence interval at 10% of maximum allowable error. Adult patients above 18 years of age were enrolled by simple random sampling. Clearance from hospital ethics committee was taken before start of study. Written informed consent was taken from each study participant.

Patients who were critically ill and those taking medications for anti-reflux from the past 1 month were excluded from the study. According to Belafsky et al reflux symptom index which was greater than 13 categorized as laryngopharyngeal reflux and these patients were enrolled for 24 hours dual probe ambulatory pH monitoring. For the pH monitoring dual probes were used 10cms apart and patient was prepped with 4% lignocaine intranasally. Under the endoscopic guidance probes were placed at upper oesophageal sphincter and 5 cms from lower oesophageal junction respectively. All the participants were instructed to avoid and restrict intake of carbonated and caffeinated beverages during the total study period. An abrupt decrease in pH of proximal electrode to less than four was recorded as laryngopharyngeal reflux. If such recording were present at 7 or more events in 24 hours than it was diagnosed as having laryngopharyngeal reflux (5). Data analysis was carried out using SPSS v22. All tests were done at alpha (level significance) of 5%; means a significant association present if p value was less than 0.05.

RESULTS

In the present study, we enrolled 100 patients enrolled attending outpatient department of otorhinolaryngology of our tertiary care hospital during the study duration. Out of the total 66% were males and 44% were females. Study participants were aged from 18 years to 52 years of age with the mean age of the Study participants was 28.7±8.4 years. Out of the total study participants, 61% patients had laryngopharyngeal reflux finding scores above 13 which was diagnostic of having laryngopharyngeal reflux disease. Among these 66 % patients with laryngopharyngeal reflux, 31% patients had more than 7 laryngopharyngeal reflux events in 24 hours at the proximal electrode on the assessment

with dual probe pH monitoring. Hence, these patients were diagnosed with laryngopharyngeal reflux disease. In the present study out of total study participants, 02 patients were recorded with alkaline reflux. In the present study out of total study participants, we found that 31% of the study participants were suffering from laryngo-pharyngeal reflux disease. (Table 1)

Table 1: Distribution of study participants according to study parameters.

Parameters	No. of patients
Male	66%
Female	44%
Mean age	28.7±8.4 years
reflux finding scores above 13	61%
More than 7 reflux events in 24 hours	31%

DISCUSSION

In the present study, we enrolled 100 patients enrolled attending outpatient department of otorhinolaryngology of our tertiary care hospital during the study duration. Out of the total 66% were males and 44% were females. Study participants were aged from 18 years to 52 years of age with the mean age of the Study participants was 28.7±8.4 years. Similar findings were reported in a study conducted by Ford C et al among patients with laryngopharyngeal reflux events and found similar results to present study (6). Similar findings were reported in a study conducted by Bove M et al among patients with laryngopharyngeal reflux events and found similar results to present study (7).

In the present study, out of the total study participants, 61% patients had laryngopharyngeal reflux finding scores above 13 which was diagnostic of having laryngopharyngeal reflux disease. Among these 66% patients with laryngopharyngeal reflux, 31% patients had more than 7 laryngopharyngeal reflux events in 24 hours at the proximal electrode on the assessment with dual probe pH monitoring. Hence, these patients were diagnosed with laryngopharyngeal reflux disease. In the present study out of total study participants, 02 patients were recorded with alkaline reflux. In the present study out of total study participants, we found that 31% of the study participants were suffering from laryngo-pharyngeal reflux disease. Similar findings were reported in a study conducted by Samuels T et al among patients with laryngopharyngeal reflux events and found small amount of the gastroesophageal acid reflux when reach the upper

aero-digestive tract reported to be causing damage to the local surrounding tissue responsible for localized symptoms (8). Similar findings were reported in a study conducted by Sasaki C et al among patients with laryngopharyngeal reflux events and found otolaryngological manifestations of gastroesophageal acid reflux comprises various range of laryngeal as well as pharyngeal symptoms such as a burning sensation of the substernal epigastric region, change of voice, throat pain, regurgitation, dysphagia, cough, frequent throat clearing and foreign-body (9).

CONCLUSION

We concluded from the present study that laryngopharyngeal acid reflux gastric contents is a major factor associated with various range of laryngeal as well as pharyngeal symptoms such as burning sensation of the sub sternal epigastric region, change of voice, throat pain, regurgitation, dysphagia, cough, frequent throat clearing and foreign-body

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