

Original Research Article

Cross sectional study of prevalence of LPRD at tertiary care hospital

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Received: 16 December 2018

Revised: 29 January 2019

Accepted: 02 February 2019

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ABSTRACT

Background: Reflux means return or regurgitation of fluid. When symptoms arise due to reflux of stomach contents into the pharynx and larynx it is termed as laryngopharyngeal reflux disease (LPRD). GERD and LPRD are two different entities and the management principle of GERD doesn't apply to LPRD. We designed a cross sectional study to evaluate the prevalence of laryngopharyngeal reflux among the patients visiting the ENT outpatient department over a duration of one year.

Methods: Patients presenting with throat and voice symptoms for more than a month were included in the study. The reflux symptom index (RSI) put forward by Belafsky et al was used to assess the symptoms of reflux. A diagnosis of reflux was made if the patient had an RSI score >13.

Results: A total of 2669 patients included in study period, out of which 1316 (49.3%) were males and 1353 (50.7%) were females. Out of the 2669, 1938 (72.6%) patients were found to have a RSI of >13. Out of the 1938 patients subjected to 70 laryngoscopy 1842 patients (95%) were found to have a RFS >7. Of the 1842 patients with RFS >7, 1234 were males (67%) and 608 were females (33%).

Conclusions: In a developing country like India, where resources and man power are limited, symptoms of laryngopharyngeal reflux might often be overlooked. The diagnosis and treatment protocol for LPRD needs to be standardized through more long term studies in the manner it has been done for GERD.

Keywords: GERD, LPRD, Prevalence

INTRODUCTION

Reflux means return or regurgitation of fluid. The Montreal international consensus group defined gastroesophageal reflux disease (GERD) as "a condition which develops when the reflux of stomach contents causes troublesome symptoms and/or complications".¹

Reflux of stomach contents may give rise to esophageal and extra esophageal symptoms.^{1,2} When symptoms arise due to reflux of stomach contents into the pharynx and larynx it is termed as laryngopharyngeal reflux disease (LPRD). Laryngopharyngeal reflux is not a well-defined entity. It generally encompasses symptoms like recurrent

throat clearing, cough, foreign body sensation in throat (globus pharyngeus), hoarseness etc. GERD and LPRD are two different entities and the management principle of GERD doesn't apply to LPRD. LPRD is usually diagnosed based on symptoms and laryngoscopy findings. It is treated with lifestyle and dietary modifications along with proton pump inhibitors (PPI).

According to El-Serag the prevalence of reflux diseases (GERD and LPR) has increased by 4% every year since 1976.⁶ Altman et al reported a 500% increase in visits to the otolaryngologist due to LPR between 1990 and 2001.⁷ Moreover, it is estimated that LPR is present in more than 50% of patients with dysphonia.

LPR has been indicated to be associated with several laryngeal pathologies such as subglottic stenosis, reflux laryngitis, laryngeal cancer. It is imperative that the otolaryngologist doesn't miss this diagnosis as it is difficult to identify and comprises of non-specific symptoms which might have other etiologies such as smoking, drinking alcohol, infection etc.

METHODS

We designed a cross sectional study to evaluate the prevalence of laryngopharyngeal reflux among the patients visiting the ENT outpatient department at tertiary care centre (SSIMS, Durg, CG) over a duration of one year (1st April 2017 to 1st April 2018).

Patients presenting with throat and voice symptoms for more than a month were included in the study. A total of 2669 patients were included in the study out of which 1316 (49.3%) were females and 1353 (50.7%) were males. Patients with acute symptoms were excluded. Detailed history was taken of all the patients presenting with throat and voice symptoms.

The reflux symptom index (RSI) put forward by Belafsky et al was used to assess the symptoms of reflux.⁸ The scale for each individual item ranges from 0 (no problem) to 5 (severe problem), with a maximum score of 45 (Table 1). A diagnosis of reflux was made if the patient had an RSI score >13.

Table 1: Reflux symptom index.⁸

How did the problems listed below affect you since the last month? Please circle the appropriate answer	0= no problem 5= severe problem					
1. Hoarseness or voice problems	0	1	2	3	4	5
2. Throat clearing	0	1	2	3	4	5
3. Excess mucus or postnasal drip (descends behind the nose to the throat)	0	1	2	3	4	5
4. Difficulty in swallowing solids, fluids or tablets	0	1	2	3	4	5
5. Coughing after eating or lying down	0	1	2	3	4	5
6. Breathing difficulties or choking episodes	0	1	2	3	4	5
7. Annoying cough	0	1	2	3	4	5
8. Sensation of a lump or foreign body in the throat	0	1	2	3	4	5
9. Burning, heartburn, chest pain, indigestion, or stomach acid coming up (reflux)	0	1	2	3	4	5
Total						

All patients with a RSI score >13 were subjected to rigid 70⁰ laryngoscopy and their laryngeal findings were noted and scored according to the Reflux Finding Score (RFS) put forward by Belafsky et al.⁵ This scale evaluates eight items that comprise the most common laryngoscopic findings in patients with LPR: subglottic edema; ventricular obliteration; erythema or hyperemia; vocal fold edema; generalized laryngeal edema; posterior commissure hypertrophy; granuloma or granulation tissue; and excess mucus in the larynx. Each item is scored according to severity, location, and presence or absence, for a total score of 26 (Table 2). Patients presenting a score of 7 or higher were classified as having LPR.

Table 2: Reflux finding score.⁵

Subglottic edema (pseudosulcus)	0= Absent
	2= Present
Ventricular obliteration	0= Absent
	2= Partial
	4= Complete
Erythema/hyperaemia	0= Absent
	2= Only in the arytenoids
	4= Diffuse
Vocal fold edema	0= Absent
	1= Mild
	2= Moderate
	3= Severe
Diffuse laryngeal edema	4= Polypoid
	0= Absent
	1= Mild
	2= Moderate
Posterior commissure hypertrophy	3= Severe
	4= Obstruction
	0= Absent
	1= Mild
Granuloma/granulation tissue	2= Moderate
	3= Severe
	4= Obstruction
Thick endolaryngeal mucus	0= Absent
	2= Present
Total	

Patients were followed up on one month interval up to 3 months and 70⁰ laryngoscopy was repeated every month to notice any improvement in the RFS of the patients.

The treatment included

Diet and lifestyle modification – patients were advised to exercise regularly, avoid spicy and oily food, include more fibres in the diet, give up smoking/tobacco/alcohol consumption, timely meals etc. Proton pump inhibitors (PPI)–twice a day before meals.

RESULTS

A total of 2669 patients presented with throat and voice symptoms lasting since more than one month, in the ENT outpatient department during the study period, out of which 1316 (49.3%) were males and 1353 (50.7%) were females. Out of the 2669 patients who presented with throat and voice symptoms 1938 (72.6%) patients were found to have a Reflux Symptom Index of >13. All patients who reported with RSI >13 were subjected to 70° rigid laryngoscopy and their reflux finding score (RFS) was noted. Out of the 1938 patients subjected to 70° laryngoscopy 1842 patients (95%) were found to have a RFS >7.

Of the 1842 patients with RFS >7, 1234 were males (67%) and 608 were females (33%) (Table 3).

Table 3: Result.

	Females	Males	Total
Participants	1353	1316	2669
RSI >13	690	1248	1938
RFS >7	608	1234	1842

The most common symptom reported by the patients in RSI was sensation of a lump or foreign body in the throat, followed by recurrent throat clearing and coughing after eating or lying down. The most common sign noted on RFS was hyperemia/erythema of endolarynx, followed by posterior commissure hypertrophy and thick laryngeal mucus.



Figure 1: Posterior commissure hypertrophy.



Figure 2: Vocal fold edema.



Figure 3: Ventricular obliteration.



Figure 4: Subglottic edema.

On follow up evaluation majority of the patients showed improvement in the RFS score in the first month. Out of 1842 patients only 21 patients (1.14%) failed to show any improvement after three months of therapy. These patients were advised to undergo further evaluation including upper GI endoscopy and were treated accordingly.

DISCUSSION

Laryngopharyngeal reflux is often an underdiagnosed entity in clinical practice. The laryngeal mucosa is more easily damaged by the acid content reflux from the stomach, than the oesophageal mucosa.⁹ Hence the symptoms occur earlier than the oesophageal symptoms and might even be more pronounced. But the treatment protocol of GERD differs from the treatment of LPRD.^{3,4,9}

The most common symptom that we encountered in our study was sensation of a lump or foreign body in the throat, followed by recurrent throat clearing, coughing after eating or lying down and chronic irritating cough. This is of importance as these symptoms are often overlooked or treated without relief. For example, chronic cough due to LPRD would not be relieved by treatment with cough syrup. Hence the otolaryngologist must know to identify and manage LPRD.

The diagnosis of LPRD was somewhat standardized by Belafsky et al who put forward the reflux symptom index and the reflux finding score to aid in the diagnosis. They

proved that the RSI and RFS were easily reproducible scores that would also aid in the follow up of the patients and help monitor the outcome of the treatment.^{5,8}

The duration of treatment for LPRD is not standardized. In our study we continued treatment with PPI twice a day along with dietary and lifestyle modification for a period of 3 months. Beyond 3 months patients were advised to adhere to the dietary and lifestyle modification. More studies are needed for standardization of the treatment duration and treatment protocol for LPRD.

The response to treatment in our study was very encouraging as only 21 out of 1842 patients (1.14%) failed to respond to treatment. Few patients came back with relapse of symptoms after 3 months and were put on PPI for some duration till symptoms were relieved. Hence long term follow up is required to make adjustments to the treatment according to symptoms as and when necessary.

CONCLUSION

In a developing country like India, where resources and man power are limited, symptoms of laryngopharyngeal reflux might often be overlooked. LPRD is often silent with patients presenting with symptoms like chronic cough, throat clearing and globus sensation. Hence, it is imperative for Otolaryngologists to keep a high index of suspicion and to keep LPRD as a differential diagnosis in such cases. Diagnosis of LPRD is non-expensive, doesn't consume too much time or man power. Treatment of LPRD is also easily amenable to a developing country. With increasingly sedentary lifestyle and habits like smoking/alcohol consumption, the LPRD is becoming more prevalent.

The diagnosis and treatment protocol for LPRD needs to be standardized through more long term studies in the manner it has been done for GERD. Lastly, it has to be kept in mind that GERD and LPRD are two different entities and must be managed in different manner.

Funding: No funding sources

Conflict of interest: None declared

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

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Cite this article as: Gaur RS, Patra P. Cross sectional study of prevalence of LPRD at tertiary care hospital. *Int J Otorhinolaryngol Head Neck Surg* 2019;5:445-8.