

Laryngopharyngeal reflux disease in a series of Sri Lankan patients

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Abstract

Introduction

Laryngopharyngeal reflux disease (LPR) occurs due to reflux of gastric contents into the larynx, pharynx and upper aerodigestivetractas a result of upper oesophageal sphincter dysfunction. Other aliases commonly used are extraesophageal reflux, reflux laryngitis or posterior laryngitis. LPR contributes up to 50% of laryngeal complaints hence; it is commonly encountered in clinical practice. LPR is present in 4-10% of those with gastro oesophageal reflux disease (GORD) while, about 20-70% with LPR has symptoms of GORD. However, there is paucity of data regarding LPR, its characteristics and associations in a Sri Lankan population. Therefore, this study aimed to describe the demographic characteristics, presenting symptoms, dietary patterns and associations and laryngoscopic findings in the study population. It also explores the relationship between the reflux symptoms index (RSI) and the reflux findings score (RFS) and the effect of treatment on the above parameters.

Reflux symptom index (RSI)-(0-5), Max -45

1. Throat clearance
2. Hoarseness/problem with voice
3. Excessive throat mucus/post nasal drip
4. Difficulty in swallowing food, liquid
5. Coughing after eating or lying down
6. Breathing difficulties/chocking episodes
7. Troublesome/annoying cough
8. Sensation of lump in the throat
9. Heartburn/chest pain or acid coming up

Reflux finding score (0-26) on FOL

Finding	Score
Subglottic edema(pseudo sulcus vocalis)	0 = absent 2 = present
Ventricular obliteration	2 = partial 4 = complete
Erythema/hyperemia	2 = arytenoids only 4 = diffuse
Vocal cord edema	1 = mild 2 = moderate 3 = severe 4 = polypoid
Diffuse laryngeal edema	1 = mild 2 = moderate 3 = severe 4 = obstructing
Posterior commissure hypertrophy	1 = mild 2 = moderate 3 = severe 4 = obstructing
Granuloma/granulation	2 = present 0 = absent
Thick endolaryngeal mucus/other	2 = present 0 = absent

Following dietary habits were considered and depending on the amount of consumption, Dietary Score was given for each (0-5) with the maximum of 60 points.(Chili, Curries, Tea, Coffee, Fatty foods, Onions, Sour fruits, Tomatoes, Vinegar, Pickles, Bread, Hoppers)

Results

65 patients were included. Of these 51 were female (77.3%). The mean age was 41.1 (range 20-78, SD 13.1). The mean RSI and RFS were 9.2 (SD 2.9) and 6.9 (SD 2.5) respectively. Highest observed were troublesome coughs

(0.25) and breathing difficulties (0.37). Highest observed RFS were erythema (2.03), ventricular obliteration (1.54) and posterior commissure hypertrophy (1.18) and lowest observed was vocal cord granuloma (0). 27.7% of patients had associated dental erosions and 12.3% had symptoms suggestive of sinusitis.

Methodology

Consecutive patients presented with the clinical diagnosis of LPR over one year period were included. Demographic, dietary and RSI data were obtained by mean of an interviewer administered questionnaire. FOL was performed in all patients by the same investigators. Patients were given uniform treatment with lifestyle modification and medication including antacids and proton pump inhibitors. Routine follow up and assessment with repeat administration of the questionnaire and FOL was arranged for all patients at a period of 4 weeks from the initial assessment. Reflux scores were sensation of lump in throat (2.0), throat clearance (1.6) and heartburn (1.9) while, lowest observed There was no association between the dietary score and the RSI (p = 0.59) or RFS (p= 0.83). However, high dietary score was significantly associated with vocal fold edema (p = 0.45) and diffuse laryngeal edema (p = 0.49). There was no significant association between RFS>7 and the RSI (p = 0.531).

Statistically significant improvements in RSI (p < 0.001), RFS (p < 0.001) and dietary score (p < 0.001) were seen at post intervention follow up.

Mean age was 41.1 years

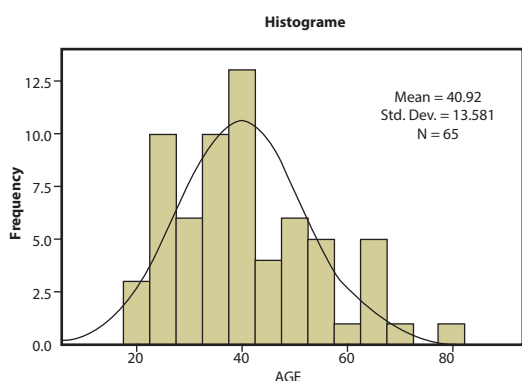


Figure 1- Age Distribution of the sample population.

Table 1- Reflux finding score

Findings	Mean score	Percentage observed
1 Subglottic edema(pseudo sulcus vocalis)	0.75	40.0
2 Ventricular obliteration	1.54	87.2
3 Erythema/hyperemia	2.03	98.5
4 Vocal cord edema	0.77	64.2
5 Granuloma/granulation	0.00	0.0
6 Diffuse laryngeal edema	0.09	4.6
7 Posterior commissure hypertrophy	1.18	66.2
8 Thick endolaryngeal mucus/other	0.62	56.9

Table 2-Dietary Consumption Pattern in LPR patients

Food item	Mean consumption score
Chillie	2.03
Curry	1.89
Tea	2.86
Coffee	0.43
Fat	1.62
Onion	1.74
Sour food	1.85
Tomato	1.23
Vinegar	0.34
Pickle	0.26
Bread	1.05
Hoppers	0.49

Table 3- Reflux Symptom Index

Reflux symptom	Mean score	Percentage observed
1. Throat clearance	1.85	72.5%
2. Hoarseness	0.92	47.7%
3. Excessive throat mucus	1.09	53.8%
4. Difficult in swallowing	0.48	29.2%
5. Coughing after eating or lying down	0.45	29.2%
6. Breathing difficulties	0.37	23.1%
7. Troublesome cough	0.25	13.4%
8. Sensation of lump in the throat	2.06	84.6%
9. Heartburn	1.63	70.9%

Mean RSI score = 9.15; SD = 2.92

Table 4-Complications and Associations.

Complication	Frequency	Percentage
Sinusitis	8	12.3%
Otitis media with effusion	6	9.2%
OSA	6	9.1%
Dental caries	18	27.7%
Bronchial asthma	5	7.7%
Bronchiectasis	1	1.5

Table 5- Pre and Post Treatment Reflux Symptom

Reflux symptom	Pre Treatment Mean score	Post Treatment Mean score
1 Throat clearance	1.85	.56
2 Hoarseness	0.92	.32
3 Excessive throat mucus	1.09	.43
4 Difficult of swallowing	0.48	.12
5 Coughing after eating or lying down	0.45	.11
6 Breathing difficulties	0.37	.20
7 Troublesome cough	0.25	.02
8 Sensation of lump in the throat	2.06	.23
9 Heartburn	1.63	.34

Figure 2 – Mucosal erythema and granuloma formation

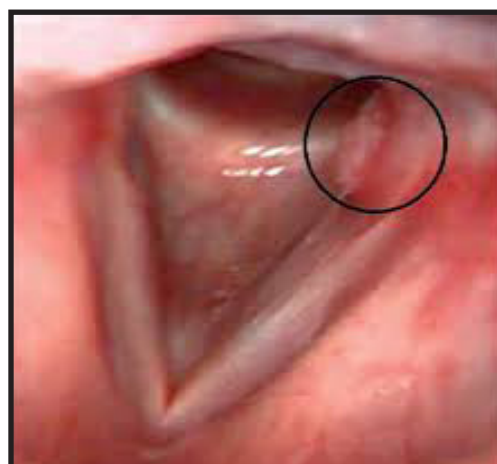


Figure 3-Thick mucosal strings



Discussion

Efficacy of anti-reflux medical treatment is highly variable in the literature. In prospective studies with placebo control, anti-reflux medication showed marked improvement in reflux symptoms and signs [1, 2] while it failed to demonstrate significantly greater improvement in other studies when compared to placebo [3, 4]. However, in so many studies without placebo control, anti-reflux medication was found to be effective in resolution of laryngeal symptoms and signs. The efficacy was reported to be around 65% [6–5]. The controversial results of these studies may be due to differences in inclusion criteria, assessment of the severity and outcome of symptoms and signs, and different doses or duration of the medication.

In this study, empiric anti-reflux treatment with duration of 4 weeks yielded statistically significant improvement in RSI and RFS. Relating with the symptoms; treatment was successful in all subtopics of RSI regarding the severity but not successful for complete eradication of symptoms as assessed in terms of frequency. This means that the treatment had decreased the severity of the symptoms significantly in all subtopics but could not eradicate the complaints totally in a significant number of the patients in the study group.

Conclusions

LPR in the study population was more common in females. The mean RSI and RFS are lower than that observed in previous studies. Lack of association between RSI and RFR is noteworthy. Dietary modifications and pharmacological management are associated with statistically significant RSI and RFS improvement.

References

1. El-Serag HB, Lee P, Buchner A, Inadomi JM, Gavin M, McCarthy DM. Lansoprazole treatment of patients with chronic idiopathic laryngitis: a placebo-controlled trial. *Am J Gastroenterol* 2001; 96:979–83.
2. Eherer AJ, Habermann W, Hammer HF, Kiesler K, Friedrich G, Krejs GJ. Effect of pantoprazole on the course of reflux-associated laryngitis: a placebo-controlled double-blind crossover study. *Scand J Gastroenterol* 2003; 38:462–7.
3. Steward DL, Wilson KM, Kelly DH, Patil MS, Schwartzbauer HR, Long JD, et al. Proton pump inhibitor therapy for chronic laryngopharyngitis: a randomized placebo-control trial. *Otolaryngol Head Neck Surg* 2004; 131:342–50.
4. Vaezi M, Richter J, Stasney SR, Spiegel JR, Iannuzzi RA, Crawley JA, et al. Treatment of chronic posterior laryngitis with esomeprazole. *Laryngoscope* 2006; 116:254–60.
5. Kamel PL, Hanson D, Kahrilas PJ. Omeprazole for the treatment of posterior laryngitis. *Am J Med* 1994; 96:321–6.
6. DelGaudio JM, Waring JP. Empiric esomeprazole in the treatment of laryngopharyngeal reflux. *Laryngoscope* 2003; 113:598–601.

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