Section: ENT

Original Research Article

PREVALENCE OF GASTROESOPHAGEAL DISEASE IN PATIENTS WITH VOICE DISORDERS

Philo Selva R J[1], Arun Ingale[2], Vinayak Kuradagi[2], Sharath Babu K[3]

[1]Final Year Resident, Department Of ENT, Gadag Institute of Medical Sciences, Gadag, Karnataka, India.
[2]Assistant Professor, Department Of ENT, Gadag Institute of Medical Sciences, Gadag, Karnataka, India.
[3]Professor and HOD, Department Of ENT, Gadag Institute of Medical Sciences, Gadag, Karnataka, India.

Received : 26/12/2024
Received in revised form : 16/02/2025
Accepted : 02/03/2025

Keywords:
Gastroesophageal reflux disease(GERD), laryngopharyngeal reflux(LPR), Reflux Symptom Index(RSI), Reflux Finding Score(RFS).

Corresponding Author:
Dr. Sharath Babu K,
Email: entgimsgadag@gmail.com

DOI: 10.47009/jamp.2025.7.2.60

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2025; 7 (2); 299-301

Abstract

Background: Gastroesophageal reflux disease (GERD) is often implicated in patients with voice disorders. This prospective study conducted at Department of ENT, Gadag Institute of Medical Sciences, Gadag, Karnataka, India from Feb 2024 to July 2024 aimed to determine the prevalence of GERD in individuals presenting with voice disorders and evaluate its correlation between laryngopharyngeal reflux (LPR) using validated symptom and diagnostic scores. **Materials and Methods:** 30 Patients were included presenting with voice changes lasting more than three weeks were included. Exclusion criteria involved laryngeal malignancies, vocal cord paralysis, neurological disorders, and recent use of anti-reflux medications. Participants underwent a comprehensive evaluation, including nasopharyngolaryngoscopy, 24-hour dual probe esophageal pH metry and symptom scoring using the Kaufmann Reflux Symptom Index (RSI) and Reflux Finding Score (RFS). **Result:** GERD was more common in females (63.6%) than males (36.3%). The mean age of GERD-positive patients was 38.2± 10.8 years. GERD was predominantly found in Level III & IV voice users, while Level II voice users showed minimal GERD prevalence. RFS and GERD is significantly co related. **Conclusion:** GERD is prevalent in a significant proportion of patients with voice disorders, particularly among non-vocal professionals. However, common LPR symptom scores may not reliably predict GERD presence. Further large-scale studies are necessary to explore this relationship and refine diagnostic approaches for reflux-related voice disorders.

INTRODUCTION

Gastroesophageal reflux disease (GERD) is a common condition affecting 4-10% of patients visiting ENT outpatient departments, with studies indicating that 55-60% of voice disorder patients experience laryngopharyngeal reflux (LPR).[1] GERD refers to the retrograde flow of gastric contents into the esophagus and beyond, causing mucosal irritation, while LPR affects the larynx and pharynx, leading to hoarseness, throat pain, chronic cough, regurgitation, dysphagia, and a foreign body sensation in the throat.[2] LPR is supra oesophageal manifestation of GERD.[3] Unlike classic GERD, LPR primarily impacts the upper aerodigestive tract and is a major contributor to laryngeal inflammation. Voice disorders are a common presenting complaint in otolaryngology clinics, and GERD has been identified as a potential contributing factor. Anti-reflux therapy is often prescribed empirically for hoarseness when no other cause is identified. This study evaluates the prevalence of GERD in patients with voice disorders using validated tools like the Kaufman Reflux Symptom Index and Reflux Finding Score. Understanding GERD's role in voice disorders may aid in improving diagnosis and management, particularly in differentiating GERD-related voice disorders from those due to vocal strain or other etiologies and their management.

MATERIALS AND METHODS

This is a prospective cross sectional study with 30 patients who attended OPD in Department of Otorhinolaryngology, Gadag Institute of Medical Sciences, Gadag from Feb 2024 to July 2024. Inclusion criteria includes patients above 18 years and with voice complaints. Exclusion criteria comprised Laryngeal Papillomatosis, carcinoma of larynx, vocal cord paralysis, Chronic Pulmonary diseases, Hypothyroidism. LPR is evaluated by RSI, RFS and Nasopharyngolaryngoscopy to assess vocal

ISSN (O): 2687-5365; ISSN (P): 2753-6556

fold morphology and reflux signs. Common laryngeal findings of LPR are localized or diffuse laryngeal edema, opalescence and/or hypertrophy of the posterior commisure, erythema, granulation, and, sometimes, granuloma formation.[4] Reflux finding score,[5] is done by surgeon after doing laryngeal examination and scaling is done in 8 parameters- Subglottic oedema, Ventricular obliteration, Hyperemia, Vocal fold oedema, Posterior commissure hypertrophy, Granuloma and thick mucous scored from 0-26 and RFS above 7 is suggestive of LPR.[6] Kaufmann Reflux Symptom Index scoring done based on the symptoms and RSI more than 13 suggests Laryngo pharyngeal Reflex.[6]

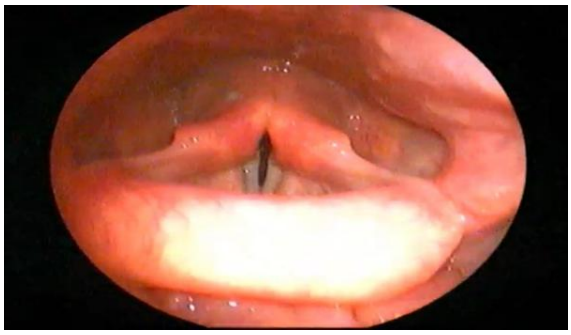

Figure 1

RESULTS

This study found that gastroesophageal reflux disease (GERD) was present in 43% of patients with voice disorders. GERD was more common in females(63.6%) than males (36.3%) with an average age of 38.2 ± 10.8 years among affected individuals. The condition was predominantly observed in Level III and IV voice users (non-vocal professionals and non-vocal non-professionals), whereas Level II voice users (teachers, lecturers) showed minimal prevalence, suggesting that GERD rather than voice disorders may be a contributing factor in this group. Additionally, there was no significant correlation between GERD and the Kaufmann Reflux Symptom Index (RSI) or Reflux Finding Score (RFS) indicating that these are reliable for identifying GERD-related voice disorders. These findings emphasize the need for further research to refine diagnostic criteria and enhance the management of GERD in patients with voice disorders.

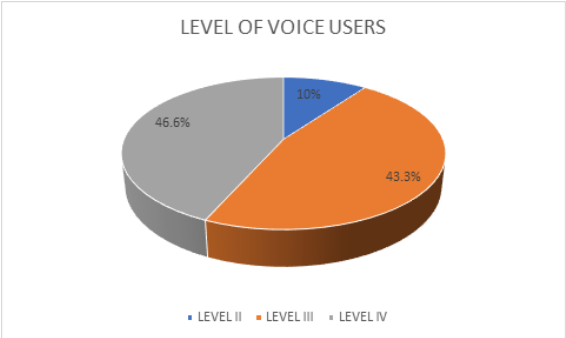

Figure 2

Table 1

Reflux Finding Score (RFS)	No. of patients	Percentage
Negative	17	56.66
Positive	13	43.33
Total	30	100

DISCUSSION

The study observed that GERD was more common in (63.6%) than males (36.3%). Professional voice users (Level II, e.g., teachers, lecturers) had a lower prevalence of GERD-related voice disorders, suggesting that their symptoms were more likely due to voice overuse. In contrast, non-vocal professionals and non-vocal non-professionals (Levels III & IV) had a higher prevalence, indicating a stronger link between GERD and voice disorders in these groups.

No significant correlation was found between GERD and smoking or alcohol consumption. Patients with GERD also had a longer duration of voice changes than those without GERD, with a median history of 12 months compared to 9 months. Diagnostic tools such as the RSI and the RFS showed inconsistencies in their correlation with GERD, suggesting a need for better diagnostic criteria.

One proposed explanation for these findings is that the laryngeal epithelium is more sensitive to reflux injury than the esophageal lining, meaning smaller amounts of acid may cause significant symptoms. Additionally, the vasovagal reflex, triggered by acid exposure, may contribute to supra-esophageal manifestations like cough and throat clearing.[7]

CONCLUSION

The study concluded that the prevalence of gastroesophageal reflux disease (GERD) among patients with voice disorders was 36.7%. This finding is lower than the previously reported prevalence of 50-80% in similar studies, suggesting variability in GERD diagnosis depending on diagnostic criteria and sample size.

Interestingly, there was no statistically significant correlation between GERD and RSI, a widely used questionnaire-based tool for assessing laryngopharyngeal reflux (LPR). However, the RFS, which is based on laryngoscopic findings, showed a possible association with GERD. This suggests that while questionnaire-based assessments may not always be reliable, direct laryngoscopic evaluation may provide better diagnostic insights.

ISSN (O): 2687-5365; ISSN (P): 2753-6556

Additionally, the study examined different levels of voice users and found that level II voice users primarily experienced voice disorders due to voice overuse, whereas level III and IV voice users had a higher likelihood of GERD-induced voice disorders. Moreover, there was no statistically significant correlation between GERD and lifestyle factors such as smoking and alcohol consumption. This contradicts the general assumption that these factors directly contribute to GERD-related voice disorders and suggests that other pathophysiological mechanisms may play a more dominant role.

The study highlights the need for further research with larger sample sizes to establish stronger statistical correlations between GERD, LPR, and voice disorders. It also underscores the importance of using multiple diagnostic modalities, rather than relying solely on symptom-based indices like RSI. These findings have implications for refining clinical diagnosis and treatment strategies, potentially leading to more targeted and effective management of GERD-related voice disorders.

REFERENCES

1. Naeem Mahhadoom, Ali Abouloyoun, Hassan A, Khatid O. Dbafar, Zohair J. Gazzaz, Badr A,Azab. Prevalence of gastro-esophageal reflux disease in patients with laryngeal and voice disorders. Saudi Med J 2007;28 (7):1068-71
2. Hopkins C, Yousaf U,Pederson M. Acid reflux treatment for hoarseness. The Cochrane library Oxford. Wiley publishing,January 2006;25(1):50-54
3. 3. Maximillian Groome, James P. Cotto, Marina Borland, Shirley McLeod, David A. Johnston, John F. Dillon. Prevalence of Laryngopharyngeal Reflux in a population with Gastroesophageal Reflux. Laryngoscope. August 2007;117(8):1424–28
4. 4. James A. Koufman, Milan R. Amin, Margeurite Netti. Prevalence of reflux in 113 consecutive patients with laryngeal and voice disorders. Otolaryngology– Head and Neck Surgery, October 2000;123(4):385-8
5. 5. Peter C. Belafsky, Gregory N. Postm, James A. Koufman. The Validity and Reliability of the Reflux Finding Score (RFS).Laryngoscope, August 2001;111:1313–17
6. 6. Peter CA, Gregory NA, James AA Koufmann. Validity and reliability of Reflux Symptom Index, Voice journal, June 2002;16(2):274–77R.
7. 7. Fass, S. R. Achem , S. Harding, R. K. Mittal, E. Quigley. Review article: Supra- esophageal manifestations of gastro-oesophageal reflux disease and the role of night-time gastro-oesophageal reflux. Alimentary Pharmacology & Therapeutics, December 2004;20(9):26–38.

ISSN (O): 2687-5365; ISSN (P): 2753-6556