

Research Article

Oral Manifestation in Gastro-Oesophageal Reflux Disease - A Short Study

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ABSTRACT:

Background: Gastroesophageal reflux disease is a common condition that results from the reflux of gastric material through the lower esophageal sphincter into the esophagus or oropharynx. The aim of the present study was to assess oral manifestations in gastro-oesophageal reflux disease by endoscopy.

Materials & Methods: The prospective study was carried in the department of Oral Medicine & Radiology. The study group consisted of 50 patients with Gastroesophageal reflux disease. The presence/absence of various indicators was evaluated for each patient.

Results: We observed that sensitivity and halitosis were most prevalent while tooth wear was least observed. In our study we found halitosis was found in more than 90% of cases.

Conclusion: In conclusion, our study suggests that Xerostomia is a significant clinical symptom of GERD patients and erythema of soft palate/uvula, tooth wear is significant clinical sign of GERD patients.

KEYWORDS: GERD, xerostomia, halitosis, erythema

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INTRODUCTION:

Gastroesophageal reflux disease (GERD) is a common condition that results from the reflux of gastric material through the lower esophageal sphincter (LES) into the esophagus or oropharynx, causing symptoms and/or injury to esophageal tissue. While heartburn and acid regurgitation may be the most commonly reported symptoms of GERD, they are not the only associated symptoms^[1]. Approximately one third of the population in industrialized countries has occasional or continues upper gastrointestinal disorders. One fourth of these patients with symptoms seek medical help, and about half of these have dyspeptic symptoms^[2]. Gastroscopy examination for patients with upper gastrointestinal disorders is used. According to modern medical practice; the annual need for Gastroscopy is

one per 100 inhabitants^[3,4]. Thus gastrointestinal disorders are important from an epidemiological point of view and we being oral physicians must be aware of their consequences in the mouth. And vice-versa if the dentist observes signs and symptoms in the mouth that may have been caused by an underlying disease such as Gastroesophageal reflux disease, the early referral of the patient to a gastroenterologist and early treatment given may prevent the later complications like premalignant and malignant conditions of oesophagus^[5]. The most common symptoms often present are heartburn, regurgitation of gastric contents into the mouth, dysphagia, blood loss if the esophageal erosion and ulcers, and asthma-like symptoms and chronic cough if refluxed material is spilled into the larynx and tracheobronchial tree^[6].

From dental point of view oral manifestations

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such as dental erosions because of regurgitation of gastric contents which may be below pH 1, halitosis, non-specific burning sensation, mucosal ulceration/erosion, loss of taste both xerostomia and increased salivary flow are observed^[7].

The aim of the present study was to assess oral manifestations in confirmed patients with gastroesophageal reflux disease by endoscopy.

MATERIALS & METHODS:

The prospective study was carried in the department of Oral Medicine & Radiology of our institute. The study had institutional ethical committee clearance. The participants were informed about the study and an informed consent was obtained from each participant. The study group consisted of 50 patients with GERD. Patients with other systemic diseases and those undergoing treatment were excluded. All the patients had undergone endoscopy and were diagnosed as GERD by an experienced gastroenterologist. A thorough oral and dental examination was performed using mouth mirror and probe and sufficient light. The presence/absence of the indicators was evaluated for each patient. These included signs & symptoms such as xerostomia, sensitivity, halitosis, Soft/hard palate erythema and tooth wear. Chi-square test statistical analysis was done.

RESULTS:

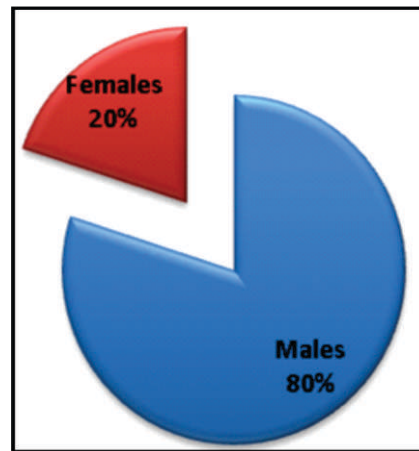
The results were tabulated and following observations were done. In our study 40 participants were males and 10 were females (Graph 1). Most of the patients were within the age group of 30 to 60 years (n=27) (Graph 2). Only 7 patients were more than 60 [Table 1]. We observed that sensitivity and halitosis were most prevalent (n=44) but the values were not significant. Tooth wear was least observed (n=05).

Table 1: Age distribution among the participants.

Age (yrs)	Count	%
<30	16	32
30-60	27	54
>60	7	14

In our study we found xerostomia symptom statistically significant (0.003) while halitosis was found in more than 90% of cases. Soft palate/uvula erythema which was clinical sign was statistically significant in our study. In the present study, tooth wear

Graph 1: Distribution of gender.



Graph 2: Distribution of age.

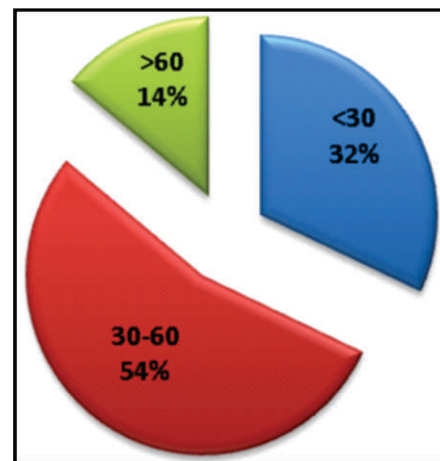


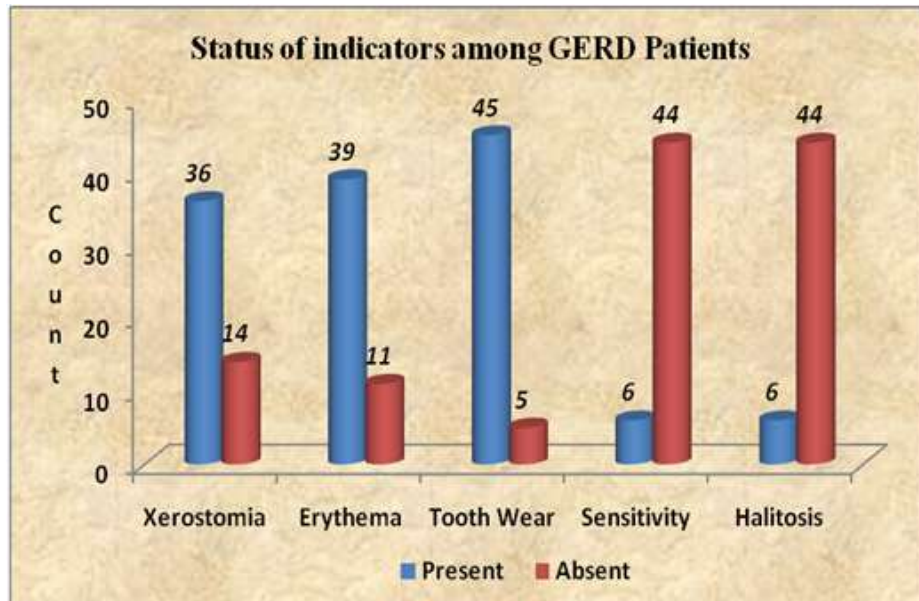
Table 2 : Prevalence of indicators among the participants.

Indicators	Present	Absent	p-value
Xerostomia	14	36	0.003
Erythema	11	39	0.000
Toothwear	05	45	0.000
Sensitivity	44	06	Not significant
Halitosis	44	06	Not significant

was statistically significant, while sensitivity was not statistically significant (Table 2; Graph 3).

DISCUSSION:

There is a close correlation between GERD and oral cavity diseases as it is recognized by gastroenterologists and other specialists^[7]. In 1933, Bodecker noted a relationship between gastrointestinal alterations and dental erosion; his thought was shared by Barga and Austin in 1937 and two years later by

Graph 3: Status of indicators among GERD Patients.

Holst and Lange^[8-10]. In 1971, Howden et al. reported that dental erosions may lead to the diagnostic suspect of acid reflux in patients with silent GERD^[11]. Regurgitation of gastric acid into mouth leads to tooth erosion and has been observed in a number of studies^[2,3,5,12]. The erosion determined by gastric reflux is typical because the lingual and occlusal surface of the posterior teeth is affected, as confirmed by some studies^[12-13]. The damaged teeth are the mandibular molars of the primary and permanent dentition. This kind of erosion is different from the vomiting caused by bulimia because it involves the lingual surfaces of mandibular incisors. It also differs from the erosion caused by acids coming from extrinsic source, in which it is possible to note damage to the labial surfaces of the anterior teeth with a decreasing severity in the posterior area. In cases of chronic vomiting, bulimia and anorexia there is no doubt that gastric acid reaches the oral cavity and possibly causes erosion but these are rare clinical entities compared with the commonly occurring acid Gastroesophageal reflux that is frequently mentioned as a causal factor in erosion. Järvinen et al. underline the presence of burning mouth, aphthoid lesions and hoarseness in patients with disorders of the upper digestive tract^[14]. Halitosis was most prevalent and it is attributed to volatile sulphur compounds produced by oropharyngeal bacteria^[15]. Halitosis was not statistically significant which is also finding according to devault KR (2005)^[16].

In our study we found xerostomia statistically significant which is in accordance with other studies^[14,17,18]. Soft palate/uvula erythema which was

clinical sign was statistically significant in our study and was in accordance with other studies^[17,19].

Erythema of the soft palate and uvula, glossitis, epithelial atrophy, xerostomia could be common in GERD patients. However, the mucosal changes described are quite common and not pathognomonic and specific of GERD patients. In fact a careful differential diagnosis should be made with oral candidiasis, Sjögren syndrome, and changes in salivary flow, drug-related xerostomia and oral lesions induced by smoking. Moreover, dietary changes and poor oral hygiene can cause lesions similar to those induced by acid reflux. The association between oral mucosal manifestations, enamel erosions and the patient's symptoms should induce the dentist or the general practitioner towards the suspected diagnosis of GERD. We observed that, dental erosion may be seen in severe Gastroesophageal reflux disease of long duration. Moreover, not all patients with reflux disease develop erosion.

CONCLUSION:

In conclusion, our study suggests that Xerostomia is a significant clinical symptom of GERD patients and erythema of soft palate/uvula, tooth wear is significant clinical sign of GERD patients. Keeping in mind these clinical signs and symptoms, as oral physicians, we can advice patients to consult gastroenterologist for treatment of GERD so that we can prevent the further complications of GERD. However, further studies need to be done with larger samples.

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Nil.

Conflicts of Interest

There are no conflicts of interest.

REFERENCES:

- Kahrilas PJ. GERD pathogenesis, pathophysiology, and clinical manifestations. *Cleve Clin J Med*. 2003 Nov;70 Suppl 5:S4-19. doi: 10.3949/ccjm.70.suppl_5.s4. PMID: 14705378.
- Provision of gastrointestinal endoscopy and related services for a district general hospital. Working Party of the Clinical Services Committee of the British Society of Gastroenterology. *Gut*. 1991 Jan;32(1):95-105. doi: 10.1136/gut.32.1.95. PMID: 1991644; PMCID: PMC1379223.
- Blum AL. Therapeutic approach to ulcer healing. *Am J Med*. 1985 Aug 30;79(2C):8-14. doi: 10.1016/0002-9343(85)90565-0. PMID: 2863981.
- Farhadi A, Fields JZ, Hoseini SH. The assessment of esophagogastroduodenoscopy tolerance a prospective study of 300 cases. *Diagn Ther Endosc*. 2001;7(3-4):141-7. doi: 10.1155/DTE.7.141. PMID: 18493558; PMCID: PMC2362842.
- Greenberg MS, Glick M. *Burket's Oral medicine*. 10th Edn.: 2003.
- Pope CE II. Diseases of the esophagus. In: Wyngaarden JB, Smith LH Jr. *Cecil textbook of medicine*. Saunders: Philadelphia. *Br Dent J* 1988;18;679-83. Hagen WJ et al, *AJM* (2008).
- Farrokhi F, Vaezi MF. Extra-esophageal manifestations of gastroesophageal reflux. *Oral Dis*. 2007 Jul;13(4):349-59. doi: 10.1111/j.1601-0825.2007.01380.x. PMID: 17577320.
- Bodecker C. Dental erosion: its possible causes and treatment. *Dental Cosmos* 1933; 75: 1056-62.
- Bargen J, Austin L. Decalcification of teeth as a result of obstipation with long continued vomiting: report of a case. *J Am Dent Assoc Dent Cosmos* 1937; 24:1271-3. 10.14219/jada.archive.1937.0227
- Holst J, Lange F. A contribution toward the genesis of tooth wasting from nonmechanical causes. *Acta Odontol Scand* 1939; 1; 36-48. <https://doi.org/10.3109/00016353909041107>
- Howden GF. Erosion as the presenting symptom in hiatus hernia. A case report. *Br Dent J*. 1971 Nov 16;131(10):455-6. doi: 10.1038/sj.bdj.4802772. PMID: 5289435.
- Schroeder PL, Filler SJ, Ramirez B, Lazarchik DA, Vaezi MF, Richter JE. Dental erosion and acid reflux disease. *Ann Intern Med*. 1995 Jun 1;122(11):809-15. doi: 10.7326/0003-4819-122-11-199506010-00001. PMID: 7741364.
- Ali DA, Brown RS, Rodriguez LO, Moody EL, Nasr MF. Dental erosion caused by silent gastroesophageal reflux disease. *J Am Dent Assoc*. 2002 Jun;133(6):734-7; quiz 768-9. doi: 10.14219/jada.archive.2002.0269. PMID: 12083649.
- Järvinen V, Meurman JH, Hyvärinen H, Rytömaa I, Murtomaa H. Dental erosion and upper gastrointestinal disorders. *Oral Surg Oral Med Oral Pathol*. 1988 Mar;65(3):298-303. doi: 10.1016/0030-4220(88)90113-2. PMID: 3162579.
- Krespi YP, Shrimme MG, Kacker A. The relationship between oral malodor and volatile sulfur compound-producing bacteria. *Otolaryngol Head Neck Surg*. 2006 Nov;135(5):671-6. doi: 10.1016/j.otohns.2005.09.036. PMID: 17071291.
- Lee HJ, Kim HM, Kim N, Oh JC, Jo HJ, Lee JT, Chang HY, Chang NH, Ahn S, Lee JY. Association between halitosis diagnosed by a questionnaire and halimeter and symptoms of gastroesophageal reflux disease. *J Neurogastroenterol Motil*. 2014 Oct 30;20(4):483-90. doi: 10.5056/jnm14052. Epub 2014 Sep 26. PMID: 25257469; PMCID: PMC4204417.
- Di Fede O, Di Liberto C, Occhipinti G, Vigneri S, Lo Russo L, Fedele S, Lo Muzio L, Campisi G. Oral manifestations in patients with gastro-oesophageal reflux disease: a single-center case-control study. *J Oral Pathol Med*. 2008 Jul;37(6):336-40. doi: 10.1111/j.1600-0714.2008.00646.x. Epub 2008 Feb 15. PMID: 18284539.
- Lazarchik DA, Filler SJ. Dental erosion: predominant oral lesion in gastroesophageal reflux disease. *Am J Gastroenterol*. 2000 Aug;95(8 Suppl):S33-8. doi: 10.1016/s0002-9270(00)01076-5. PMID: 10950103.
- Linnett V, Seow WK, Connor F, Shepherd R. Oral health of children with gastro-oesophageal reflux disease: a controlled study. *Aust Dent J*. 2002 Jun;47(2):156-62. doi: 10.1111/j.1834-7819.2002.tb00321.x. PMID: 12139271.