

Dental Erosions: A Manifest of Gastroesophageal Reflux Disease (GERD)

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ABSTRACT

Objective: To record the frequency of dental erosion (DE) in patients with Gastro esophageal Reflux Disease (GERD).

Methodology: The research included a total of one hundred patients who had been diagnosed with gastro esophageal reflux disease. Duration of study was 3 months from July, 2022 to September, 2022. Patients who presented with a digestive system illness in which stomach acid splashed over the bottom of the esophagus met the criteria for a diagnosis of GERD, which we utilized to make the diagnosis. It manifested itself in the form of a strong burning feeling in the chest, which often occurred after meals and typically occurred many times each week. Endoscopy and the patients' medical histories were used to make the diagnosis. For the purpose of making a tooth erosion diagnosis, GERD patients were evaluated presenting in the Madinah teaching hospital Faisalabad. It was shown that individuals who suffered from GERD had a significantly higher incidence of tooth erosion.

Results: In our study, 46(46%) cases were between 30-45 years of age while 54(n=54) were between 46-60 years of age, mean age was calculated as 46.14+11.85 years. Gender distribution shows that 51(51%) were male while 49(49%) were females. DE was recorded in 34(34%) while 66(66%) had no findings of the morbidity; we found no significant difference in age and gender.

Conclusion: Patients with gastroesophageal reflux disease often have dental erosion as a presenting symptom (GERD). Screening individuals with GERD for tooth erosion is crucial for identifying and treating instances timely to enhance patients' quality of life.

Keywords: Gastro esophageal Reflux Disease (GERD), Adults, Dental Erosion (DE)

INTRODUCTION

The disorder known as GERD manifests itself in symptoms that damage the digestive tract, is extremely common all over the world. It's estimated that around half of all people will suffer from symptoms of acid reflux at some point in their lives. The Montreal definition of the condition [1] explains GERD as a condition that is brought on by the reflux of stomach contents into the esophagus. The symptoms and side effects of GERD are described as being irritable, and the condition itself is explained as being caused by the reflux of stomach contents into the esophagus. [1] The prevalence of gastro esophageal reflux disease has been reported to be was highest in Iran and lowest in China. Rates in the Western Hemisphere (North America, 19.55%) and Europe (14.12%) were significantly higher than those in Asia (12.92%). Iran had the highest prevalence (18.43%) and China had the lowest prevalence (4.16%). [2]

The basic symptoms and the result of an empiric trial with acid suppression are often used to make a diagnosis of GERD. GERD is a major public health issue because of the negative impact it has on patients' quality of life and their ability to work. With the treatment of GERD significant improvement in the quality of life has been seen in multiple studies. Studies have shown that significant reduction in the physical suffering, improvement in the social life, and mental health well-being was reported [3].

Pathophysiology of GERD is complex and the junction of esophagus and stomach plays vital role. [4] Increased pressure leads to regurgitation of stomach acidic material, which in turn causes the clinical picture and pathology of GERD.[5] There are also a number of genetic and environmental risk factors that have been linked to illness. Smoking, drinking alcohol, being overweight, using non-steroidal anti-inflammatory medicines (NSAIDs), and even how you sleep may all increase your risk of developing gastroesophageal reflux disease (GERD).[6]

A recent study from Southern Punjab, Pakistan, enrolled 308 cases in the survey, with women making up contribution as 55.2% and men as 44.8%. The participants diagnosed with GERD (GerdQ score ≥ 8) were 26.6%. GERD was strongly linked to a variety of risk variables, including but not limited to increased body mass index, a history of illness, smoking, and a diet heavy in

NSAIDs, soft drinks, pickles, and spicy foods.[6] however, various among them are modifiable. Dental complications can arise from GERD, the most prevalent of which is an increase in the rate of dental erosion [7-9].

Erosion of the teeth occurs when the protective layers of enamel, dentin, and cementum are broken away over time by chemical mechanisms unrelated to bacterial activity [10]. The etiologic variables that contribute to dental erosion may be split up into two categories: extrinsic and intrinsic. Acidic meals and beverages, acidic sports drinks, chewable vitamin C pills, and sports drinks all fall under the category of extrinsic variables [11]. According to research, the following conditions are considered to be intrinsic factors: regurgitation, repeated stress-induced vomiting, some psychosomatic illnesses, alcohol misuse, and gastroesophageal reflux disease [11, 12-14]. The erosive lesions that mostly damage the enamel of the palatal surface of teeth are one of the complications that might arise as a result of having GERD [11].

An Iranian study[15] revealed that the prevalence of dental erosion in GERD patients was (22.6%) while another recent study[16] published in 2015 recorded these findings in 57.7% of the cases. Although there appears to be considerable variation between studies of the prevalence of dental erosion in patients with gastroesophageal reflux disease (GERD) across international populations, our study's findings will help to explain and quantify this variation in the population we're interested in.

METHODOLOGY

The research included a total of one hundred patients who had been diagnosed with gastroesophageal reflux disease and were between the ages of 30 and 60. Patients who had previously been diagnosed with tooth erosion and were receiving treatment for the illness were excluded from the study. Following the receipt of the patients' informed permission, a comprehensive history of Gastroesophageal Reflux Disease (GERD) was collected from each individual patient. Patients who presented with a digestive system illness in which stomach acid splashed over the bottom of the oesophagus met the criteria for a diagnosis of gastroesophageal reflux disease (GERD), which we utilised to

make the diagnosis. It manifested itself in the form of a strong burning feeling in the chest, which often occurred after meals and typically occurred many times each week. Endoscopy and the patients' medical histories were used to make the diagnosis. For the purpose of making a tooth erosion diagnosis, GERD patients were evaluated presenting in the madinah teaching hospital Faisalabad. It was shown that individuals who suffered from GERD had a significantly higher incidence of tooth erosion. SPSS version 21 was used for the analysis of the data.

RESULTS

In our study, 46(46%) cases were between 30-45 years of age while 54(n=54) were between 46-60 years of age, mean age was calculated as 46.14+11.85 years. Gender distribution shows that 51(51%) were male while 49(49%) were females. (Table 1)

DE as was recorded in 34(34%) cases with GERD while 66(66%) had no findings of the morbidity, we found no significant difference in age and gender (Table No. 2)

Table 1: showing the details of the

Variables		No. of patients(%)
Age(years)	30-45	46(46%)
	46-60	54(54%)
Gender	Male	51(51%)
	Female	49(49%)

Table 2: Association of Dental Erosion Gerd

	Age(years)		Gender	
Dental Erosion	30-45	46-60	Male	Female
Yes	12(26.09%)	22(40.74%)	16(31.37%)	18(36.73%)
No	34(73.91%)	32(59.26%)	35(68.63%)	31(63.27%)
P value	0.12		0.57	

DISCUSSION

The term "gastroesophageal reflux disease" (GERD) is used to describe a group of conditions that affect people whose health and quality of life are negatively impacted by the symptoms of gastroesophageal reflux [17]. The lower esophageal sphincter acts as an anti-reflux mechanism to prevent acid from the stomach from flowing backwards into the oesophagus. For certain people, a lack of this coordination results in a persistent ailment called gastroesophageal reflux disease (GERD) [17-18]. Dental erosions, malodor, burning sensation, mucosal ulceration, loss of taste, xerostomia, and occasionally increased salivary flow are all recorded as oral signs of GERD [19].

Since the vast majority of patients with dental erosion among these cases are either not diagnosed or remain undiagnosed, the results may be useful in bringing this issue to light and assisting in the diagnosis of those who suffer from it.

In our study, we found 46(46%) cases were between 30-45 years of age while 54(n=54) were between 46-60 years of age, mean age was calculated as 46.14+11.85 years. Gender distribution shows that 51(51%) were male while 49(49%) were females. Frequency of dental erosion in patients with gastroesophageal reflux disease (GERD) was recorded in 34(34%).

Pace et al. [20] conducted a meta-analysis of 17 research (both observational and case-control) on the topic of GERD and tooth erosion in 2008. Patients with GERD had a higher risk of experiencing tooth erosion, with a median incidence of 24%, and a prevalence of 32.5 and 17.0%, respectively [20].

When compared with the healthy control group, children who have GERD have a greater incidence of tooth erosion, according to the findings of another comprehensive study that was carried out in 2009 by Tolia et al. [21].

Three out of ten studies reporting significant relationship between tooth erosion and GERD in adults were included in a 2011 systematic review by Firouzei et al. [9] called the SEPAHAN systematic review.

According to Firouzei et al. [9.] the researchers came to the conclusion that tooth erosion and GERD are significantly

connected in adult populations, however they reported that this relationship is not particularly strong in younger persons. They demonstrated that early detection and treatment of GERD is essential in reducing dental damage and the loss of teeth caused by the condition. The primary care physicians, dentists, and gastroenterologists should all be more worried about this matter. The findings of this research were confirmed by the findings of the present investigation.

Research on gastroesophageal reflux disease (GERD) has made use of a variety of methodologies, such as monitoring of the oesophagus pH (which is regarded as the gold standard) and endoscopy; in some cases, researchers combine both of these approaches to assess the symptoms of reflux [9].

The current trial confirms that dental erosion is highly correlated with GERD. Given this correlation, it is prudent to refer GERD patients at high risk of developing dental erosion to a dentist sooner rather than later for the purpose of preventing and treating this oral pathological condition.

CONCLUSION

Patients with gastroesophageal reflux disease often have dental erosion as a presenting symptom (GERD). Screening individuals with GERD for tooth erosion is crucial for identifying and treating instances timely to enhance patients' quality of life.

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