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## Original Research

### Assessment of dental erosion in study population- A clinical study

Sapanpuneet Kaur<sup>1</sup>, Manpreet Kaur<sup>1</sup>

<sup>1</sup>Dental Practitioner, H.N. 1, Sunny Enclave, Sec 125, Greater Mohali, Desu Majra, Sas Nagar, Punjab

#### ABSTRACT

**Background:** Erosion has been identified as an important cause of the loss of tooth tissues for adults, children, and adolescents. The present study was conducted to assess the cases of dental erosion in study population. **Materials & Methods:** The present study was conducted on 525 subjects It had 310 males and 215 females. All were clinically examined by trained dental surgeon for the evaluation of dental erosion using O'Sullivan index. History with reference to medications and chronic disorders, drink and food items was obtained. **Results:** Age group 20-40 years had 110 males and 70 females, 40-60 years had 200 males and 145 females. The difference was significant (P- 0.01). Males had 27% and females had 35% prevalence rate. In males 30% premolars, 65% molars and 5% incisors had erosion while in females 38% premolars, 60% molars and 2% incisors had erosions. The difference was significant (P- 0.01). **Conclusion:** Dental erosion was mostly seen in females and molars were commonly involved than premolars and incisors.

**Key words:** Dental erosion, Molars, Premolars

**Corresponding Author:** Dr. Sapanpuneet Kaur, <sup>1</sup>Dental Practitioner, H.N. 1, Sunny Enclave, Sec 125, Greater Mohali, Desu Majra, Sas Nagar, Punjab, India.

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#### INTRODUCTION

Tooth erosion has been defined as the physical result of a localized, chronic, pathologic, and irreversible loss of dental hard tissue caused by acids or chelates without bacterial involvement. Erosion has been identified as an important cause of the loss of tooth tissues for adults, children, and adolescents. During the last decade, there has been a significant increase in the presence of dental erosion in the young population. This has resulted in an increasing number of non-carious lesions, particularly with reference to dental erosion, with rates of prevalence ranging from 1.8% to 34.1%, preferentially affecting the palatal surfaces of maxillary anterior teeth and occlusal surfaces of mandibular first molars.<sup>1</sup> The etiology of tooth erosion is multifactorial and could be due to intrinsic factors such as vomiting or regurgitation, such as gastro-esophageal reflux, anorexia and bulimia nervosa, or illnesses that cause reduction in salivary flow and extrinsic factors like dietary habits such as acidic drinks and foods, lifestyle habits, etc.<sup>2</sup> Citrus fruits and soft drinks are consumed daily by youngsters who reside in cities in Northeastern Brazil that has a tropical climate and high temperatures, which are considered some of the etiological factors for erosion, but these are dependent on other associated factors. These factors seem to influence the erosive process, making it difficult to identify the risk factors, and if it is not controlled and stabilized, the child may suffer from severe tooth loss, tooth sensitivity, overclosure, poor esthetics, or even dental abscesses in

the affected teeth. It is necessary to identify this pathological process as early as possible to prevent further progression.<sup>3</sup> The present study was conducted to assess the cases of dental erosion in study population.

#### MATERIALS & METHODS

The present study was conducted in the department of Endodontics. It comprised of 525 subjects selected for the study. It had 310 males and 215 females. All were informed regarding the study and written consent was obtained. General information such as name, age, gender etc. was recorded. All were clinically examined by trained dental surgeon for the evaluation of dental erosion using O'Sullivan index. History with reference to medications and chronic disorders, drink and food items was obtained. Results were subjected to statistical analysis. P value less than 0.05 was considered significant.

#### RESULTS

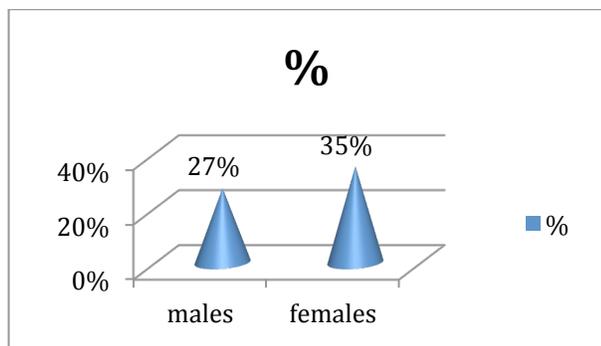
Table I shows that age group 20-40 years had 110 males and 70 females, 40-60 years had 200 males and 145 females. Graph I shows that males had 27% and females had 35% prevalence rate. Graph II shows that in males 30% premolars, 65% molars and 5% incisors had erosion while in females 38% premolars, 60% molars

and 2% incisors had erosions. The difference was significant (P=0.01).

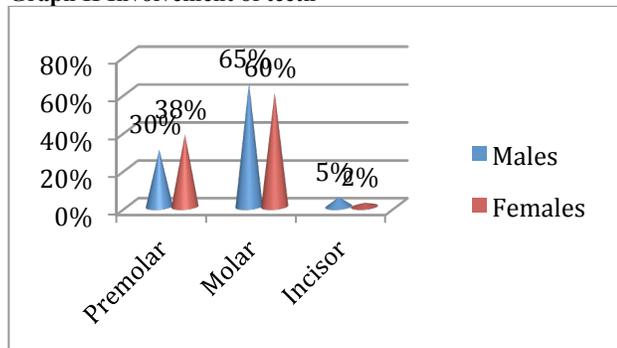
**Table I Age & gender wise distribution of cases**

Age group (years)	Males	Females
20-40	110	70
40-60	200	145

**Graph I Prevalence of dental erosion**



**Graph II Involvement of teeth**



**DISCUSSION**

The wider availability and frequent consumption of soft drinks and fruit juices, alongside anecdotal reports of tooth surface loss, has led to claims of acceleration, as well as an increased prevalence due to changes in dietary, behavioral, and hygiene habits. Erosion differs from dental caries in that it manifests as an irreversible loss of dental hard tissue by a chemical process that does not involve bacteria. Such tissue loss is insidious in nature and may not be apparent until the patient reports symptoms of sensitivity or the fracture of thinned incisal edges. Unlike dental caries, erosion occurs on plaque-free sites.<sup>4</sup> We observed that age group 20-40 years had 110 males and 70 females, 40-60 years had 200 males and 145 females. Males had 27% and females had 35% prevalence rate. This is in agreement with Talebi et al.<sup>5</sup> We found that in males 30% premolars, 65% molars and 5% incisors had erosion while in females 38% premolars, 60% molars and 2% incisors had erosions. Al- Malikt el al<sup>6</sup> in their study, 212 school children were selected through multistage cluster random sampling method. A pretested self-administered pro forma was used to record demographic data, medical history, and dietary habits. The clinical examination was done to evaluate dental erosion of children using

dental erosion index by O'Sullivan. The overall prevalence of dental erosion was 34.12% with no significant sex difference. Dental erosion was significantly related to the frequency of consumption of fruit juices (67.07%) followed by carbonated drinks (64.47%). In most of the cases, more than half of their surfaces were diagnosed as affected by erosion (26.25% central incisors, 4.83% lateral incisors). Dental erosion among the study group was found to be 34.12%, providing evidence that dental erosion is becoming a significant problem in Lucknow school children. A study conducted with young, physically active individuals, in comparison with non-active subjects revealed higher prevalence of erosive wear in individuals who practiced physical activities, due to the high consumption of citric fruits, sporting beverages, and changes in salivary flow associated with other factors.<sup>7</sup> Furthermore, the erosive potential of foods and beverages is associated not only with their pH but also with the frequency, intensity, and manner of ingestion and with the proximity between ingestion of the acid food and tooth brushing.<sup>8</sup> Yaseen et al<sup>9</sup> Dental erosion was observed in 31 (60.8%) participants with GERD and 14 (28%) participants without GERD. Bivariate analysis revealed that participants with GERD were more likely to experience dental erosion than participants without GERD. Multivariate analysis also revealed that participants with GERD had a higher risk of dental erosion. Consumption of grains and legumes, the most frequently consumed foods in China, did not correlate with dental erosion. However, carbonated beverage consumption was significantly associated with GERD and dental erosion.

**CONCLUSION**

Dental erosion was mostly seen in females and molars were commonly involved than premolars and incisors.

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