Journal of Advanced Medical and Dental Sciences Research

@Society of Scientific Research and Studies

Journal home page: www.jamdsr.com doi: 10.21276/jamdsr ICV 2018= 82.06

(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

Original Research

Evaluation of factors of dental erosion in children

Asiya Basheer

MDS, Pedodontics

Private practitioner, Jammu & Kashmir, India

ABSTRACT

Background: Tooth wear is a common problem but most often left untreated. The present study was conducted to evaluate the factors responsible for dental erosion in school children. **Materials & Methods:** The present study was conducted in the department of Pedodontics. It comprised of 205 school children age ranged 5-14 years of both genders. Careful oral examination was done in all patients and O'Sullivan Index was used for recording dental erosion. **Results:** Out of 205 patients, boys were 115 and girls were 90. The reason for dental erosion was sweets in 104 patients, snacks in 35, lemon in 80 and sweets in 82 patients. Anterior teeth were involved in 170 cases and posterior teeth in 35 cases. The difference was significant (P< 0.05). **Conclusion:** Authors found that causative factors for dental erosion were sweets, lemon, cold drinks and snacks.

Key words: Dental erosion, Children, Posterior

Received: 25 August, 2019 Revised: 8 October, 2019 Accepted: 12 October, 2019

Corresponding Author: Dr. Asiya Basheer, MDS, Pedodontics, Private practitioner, Jammu & Kashmir, India

This article may be cited as: Basheer A. Evaluation of factors of dental erosion in children. J Adv Med Dent Scie Res 2019;7(12):77-80.

INTRODUCTION

Tooth wear is a common problem but most often left untreated. Tooth wear is the loss of dental hard tissue, due to various forms of physical and chemical impacts not involving bacteria and excluding trauma.[1] Wear is, strictly speaking, intentional or unintentional attrition or abrasion and is caused by human activity. Unintentional modifications include dietary, parafunctional, occupational, traumatic, and habitual dental marks, as well as erosion. Intentional modifications include deliberate extractions, fillings, decorations and early dentistry.[2]

Prevalence of dental erosion is not well documented and measures of erosive tooth wear have been rarely reported. In addition, it is often difficult to compare the outcomes of different epidemiological studies on dental erosion due to the difference in examination standards, including scoring systems, samples and groups examined.[3]

Erosion is often described solely as a surface phenomenon, unlike caries where it has been established that the destructive effects are both on the surface and within the subsurface region.[4] However, the pathophysiology of erosion is more complex. When a solution comes in contact, with enamel, it has to diffuse first through the acquired pellicle and only thereafter can it interact with enamel leading to dental erosion.[5] The present study was conducted to evaluate the factors responsible for dental erosion in school children.

MATERIALS & METHODS

The present study was conducted in the department of Pedodontics. It comprised of 205 school children age ranged 5-14 years of both genders. Parents were informed regarding the study and written permission

was obtained. Ethical clearance was obtained prior to the study.

Information such as name, age, gender etc. was recorded. A questionnaire was designed to record information about oral hygiene practices, dietary habits and risk factors for dental erosion. Careful oral examination was done in all patients and O'Sullivan Index was used for recording dental erosion. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Gender	Boys	Girls
Number	115	90

Table I, graph I shows that out of 205 patients, boys were 115 and girls were 90.

Graph I Distribution of patients

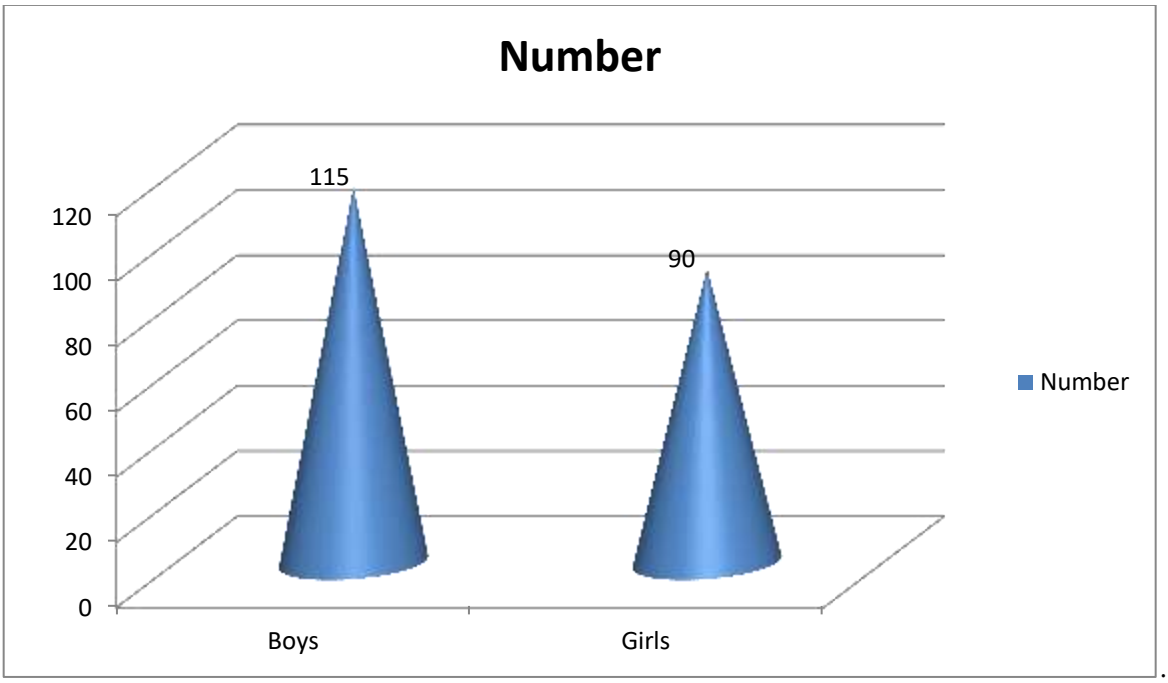
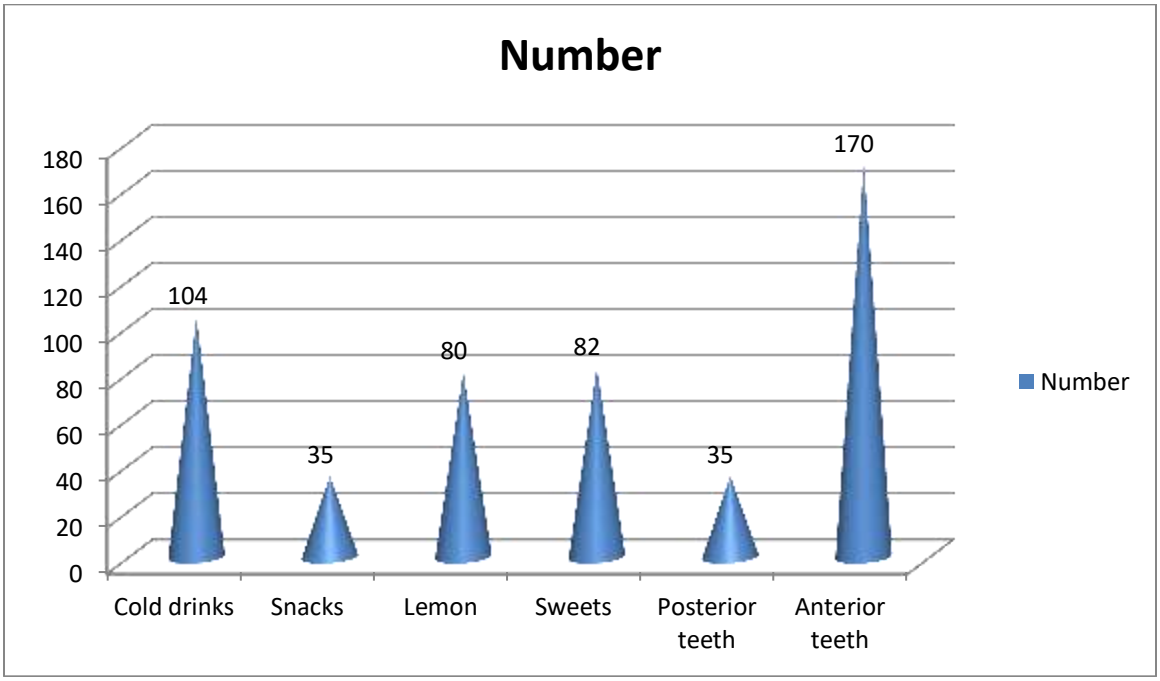


Table II Reason for dental erosion

Factors	Number	P value
Cold drinks	104	0.01
Snacks	35	
Lemon	80	
Sweets	82	
Posterior teeth	35	0.001
Anterior teeth	170	

Table II, graph II shows that reason for dental erosion was sweets in 104 patients, snacks in 35, lemon in 80 and sweets in 82 patients. Anterior teeth were involved in 170 cases and posterior teeth in 35 cases. The difference was significant (P< 0.05).

Graph II Reason for dental erosion



DISCUSSION

Erosive tissue loss is part of the physiological wear of teeth. Clinical features are an initial loss of tooth shine or luster, followed by flattening of convex structures, and, with continuing acid exposure, concavities form on smooth surfaces, or grooving and cupping occur on incisal/occlusal surfaces.[6] Dental erosion must be distinguished from other forms of wear, but can also contribute to general tissue loss by surface softening, thus enhancing physical wear processes. The determination of dental erosion as a condition or pathology is relatively easy in the case of pain or endodontic complications, but is ambiguous in terms of function or aesthetics. The impact of dental erosion on oral health is discussed.[7] The present study was conducted to evaluate the factors responsible for dental erosion in school children.

In present study, out of 205 patients, boys were 115 and girls were 90. Salas et al[8] found that as there is a change in lifestyle, the total amount and frequency of consumption of acidic foods and drinks have also changed leading to increase in dental erosion. There are different predisposing factors and aetiologies to this erosive condition. The interplay of chemical, biological and behavioral factors is crucial and helps explain why some individuals exhibit more erosion than others, even if they are exposed to the same acid challenge in their diets. Hence comprehensive knowledge of the different risk factors is a prerequisite to initiate adequate preventive (non-interventive) and, if necessary, therapeutic (interventive) measures.

We found that reason for dental erosion was sweets in 104 patients, snacks in 35, lemon in 80 and sweets in 82 patients. Anterior teeth were involved in 170 cases and posterior teeth in 35 cases. Corica et al[9] conducted a study to assess the prevalence and severity of dental erosion and to determine the potential risk factors for dental erosion among 11- to 14-year-old school children in South India. The total sample size for the study was 605, of which 303 school children were from private schools and 302 from public schools. A questionnaire was designed to record information about sociodemographic characteristics, oral hygiene practices, dietary habits and risk factors for dental erosion. The children who consumed lemon several times a day and those who preferred carbonated drinks had a higher tendency to develop dental erosion. The overall prevalence of dental erosion was found to be low (8.9%). Erosion was found to be greater in posterior teeth (65.6%) than anterior teeth (34.4%). Loss of enamel only with loss of surface contour was observed in most (94.8%) of the cases. The prevalence of dental erosion was found to be low in school children. Private school children were affected more by dental erosion. Frequency of lemon consumption and consumption of carbonated drinks were identified as risk factors.

Tao[10] conducted a study in which four sections of each tooth (i.e., buccal/labial, palatal/lingual, cervical and incisal/occlusal) were examined visually and recorded separately, scoring each surface, ranging from 0 (no loss of enamel surface characteristics) to 4 (complete

loss of enamel and pulp exposure). This index was arguably more relevant for adults and the required details prove lengthy to record. An important aspect of this index is that it measures tooth wear irrespective of aetiology and hence is not exclusively designed for diagnosis of erosion.

CONCLUSION

Authors found that causative factors for dental erosion were sweets, lemon, cold drinks and snacks.

REFERENCES

1. Mangueira DF, Alves DN, Sampaio FC, Oliveira AF. Prevalence and associated factors of dental erosion in schoolchildren of João Pessoa. Comum Ciênc Saúde 2009; 20:29-36.
2. Correr GM, Alonso RC, Correa MA, Campos EA, Baratto- Filho F, Puppin- Rontani RM, et al. Influence of diet and salivary characteristics on the prevalence of dental erosion among 12- years old schoolchildren. J Dent Child (Chic) 2009; 76:181- 7.
3. Lussi A. Erosive tooth wear – A multifactorial condition of growing concern and increasing knowledge. Monogr Oral Sci 2006; 20:1- 8.
4. Harding MA, Whelton H, O'Mullane DM, Cronin M. Dental erosion in 5 year old Irish school children and associated factors: A pilot study. Community Dent Health 2003; 20:165-70.
5. Gopinath VK. The prevalence of dental erosion in 5 year old preschoolers in Sharjah, United Arab emirates. Eur J Dent 2016; 10:215- 9.
6. Vargas- Ferreira F, Praetzel JR, Ardenghi TM. Prevalence of tooth erosion and associated factors in 11-14year old Brazilian school children. J Public Health Dent 2011;71:6- 12.
7. Deshpande SD, Hugar SM. Dental erosion in children: An increasing clinical problem. J Indian Soc Pedod Prev Dent 2004; 22:118- 27.
8. Salas MM, Nascimento GG, Varga, Ferreira F, Tarquinio SB, Huysmans MC, Demarco FF, et al. Diet influenced tooth erosion prevalence in children and adolescents: Results of a meta- analysis and meta-regression. J Dent 2015; 43:865- 75.
9. Corica A, Caprioglio A. Meta- analysis of the prevalence of tooth wear in primary dentition. Eur J Paediatr Dent 2014; 15:385-8.
10. Tao DY, Hao G, Lu HX, Tian Y, Feng XP. Dental erosion among children aged 3-6 years and its associated indicators. J Public Health Dent 2015; 75:291-7.