Original Article

Distribution Of Carious Lesions Amongst Subjects Reporting To Department of Endodontics of Institute

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ABSTRACT

Background: The study aims to evaluate the occurrence of type of dental caries and its gender predisposition based on classification of GV Black classification for dental caries. **Material and Method**: A sample of 250 adult patient was evaluated. Out of which 123 male and 127 female were selected at random from outpatient department of Conservative department.**Result:** A total of 845 carious lesions were detected from 250 patients on various surfaces of the tooth by the classification by GV Black. Following results were confirmed amounting to total as: Class I Buccal Surface 46 (5.5 %), Class I palatal Surface 52 (6.1 %), Class I Occlusal Surface 501 (59.4%), Class II Mesio-Occlusal (MO) 82 (9.7 %), Class II Disto-Occlusal (DO) 70 (8.3 %), Class II Mesio-Occlusal-Distal (MOD) 23 (2.7 %), Class III Mesial 19 (2.3 %), Class III Distal 24 (2.7%), Class IV 11 (1.3 %) and Class V 17 (2%) were reported. **Conclusion:** The study revealed that out of total caries lesions, the lesions which were diagnosed as class I according to GV Black's classification were recorded the maximum in number that too seen most in females as compared to males.

Keywords: GV Black caries classification, Diagnosis.

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INTRODUCTION

The majority of the studies have noticed a remarkable reduction in the occurrence of dental caries because of the significant improvement of the standards of livelihood, improved personal hygiene, and use of fluorides. Also by adapting to healthy lifestyles and practicing preventive oral hygiene programs the developing countries have increasing level of dental caries, thus the need of treatment has been observed (1). Dental caries happens to be the most common chronic disease seen worldwide by affecting almost 90% of adults in the US itself. According to the stats provided by the United States National Institutes of Health Consensus Development Panel ,more than 75% of American adults with an age group between 35 to 44 years have lost not more but at least one tooth due to the chronic condition of dental caries(2). Dental caries happens to be a multifactorial disease as different factors play a part in the initiation and progression of the carious lesion. Which include environmental factors, behaviour patterns and of course the host (2). The report also disclosed remarkable variation in the occurrence of dental caries in adult and aged, this was subjected to environmental and host factors as well (3). Over the last century

the prevalence of dental caries have changed remarkably. A recent statistics show that around 90% of the carious lesions occur only in the pits and fissures of posterior permanent teeth, thus molars are most prone to dental caries(4). Some knowledge and information on dental caries which include the prevalence, extent and severity gives us basic information about caries preventive programs and need of treatment in populations which inflicts a huge financial burden and adverse effects on the quality of life of an individual(5). The present study was done to evaluate the incidence of different types of carious lesions amongst subjects reporting to the department.

MATERIALS AND METHODS

Patient's were evaluated at the outpatient Conservative Dentistry and Endodontics, UCMS College of Dental Surgery, Bhairahawa,Nepal. DMF index was used to record the occurrence and distribution of dental caries according to GV Black classification.. A protocol was set and the clinical examination of the patients was done according to GV Blacks classification for dental caries. Along with the WHO criteria which states that

34

"clinically all the caries were recorded as present whenever a lesion in a pit or fissure or on a smooth surface was detected such as (A) softened floor (B) undermined enamel or softened wall. On Proximal surface it was made sure that the explorer had engaged the lesion or by taking confirmatory bitewing radiograph if any doubt was present to detect caries"(5). The GV black classification states carious lesion as follows: Class I: carious lesions involving occlusal, buccal and lingual pits of posterior teeth and carious lesions involving lingual surface of anterior teeth. Class II: the carious lesions involving proximal surface of posterior teeth only. Class III: the carious lesions involving proximal surface of anterior teeth but not including the incisal edge. Class IV: these carious lesions involve the proximal surface of anterior teeth that include lesions present on the incisal edge of the teeth. Class V: the carious lesions involving the gingival one third of the facial or lingual aspect of all teeth (6). All the data was arranged in a tabulated form and expressed as percentage of total value.

RESULTS

A total of 250 patients were included in the study, out which males were 123 and females were 127 respectively. (Graph 1) From the available 250 patients a total of 845 carious lesions were diagnosed according to the GV Black's classification. Considering the classification and using DMF index a total of 845 carious lesions were detected out of which : Class I Buccal Surface 46 (5.5 %), Class I palatal Surface 52 (6.1 %), Class I Occlusal Surface 501 (59.4%), Class II Mesio-Occlusal (MO) 82 (9.7 %), Class II Disto-Occlusal (DO) 70 (8.3 %), Class II Mesio-Occlusal-Distal (MOD) 23 (2.7 %), Class III Mesial 19 (2.3 %), Class III Distal 24 (2.7%), Class IV 11 (1.3 %) and Class V 17 (2%) were reported. As it is seen in fig.3, the surface involved of carious lesion according to GV Black's classification among male and female the percentages suggest that female had more lesions than male, occurring as follows Class I buccal: male 34.5 % and female 64.5 %, Class I palatal: male 38.2 % and female 61.8 %, Class I

Table 1: Distribution Of Carious Lesions With Sites

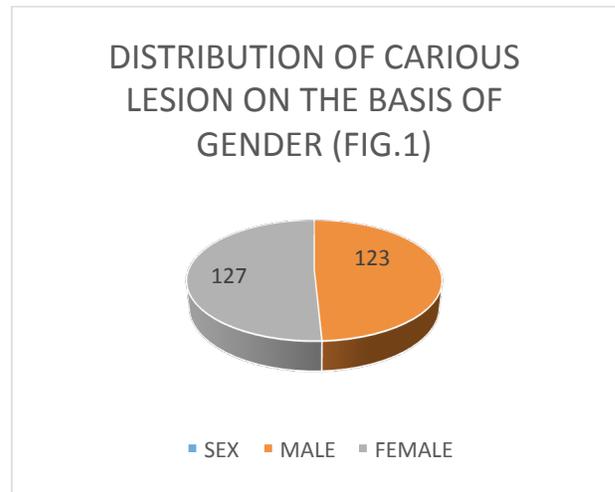| SITE	PERCENTAGE
CLASS1 B.S	6%
CLASS1 P.S	6%
CLASS1 O.C	59.40%
CLASS2 M.O	9.70%
CLASS2 DO	8.30%
CLASS2 M.O.D	2.70%
CLASS3 M.S	2.30%
CLASS3 D.S	2.70%
CLASS4	1.30%
CLASS5	2%

occlusal: male 49.9% and female 50.1%, Class II mesio-occlusal: male 45% and female 55%, Class II disto-occlusal: male 49.8% and female 50.2%, Class II mesio-occlusal-distal: male 38.6% and female 61.3%, Class III mesial:male 39.1% and female 60.9%, Class III distal: male 43.9% and female 56.1%. Class IV: male

38.2% and female 61.8%. Here it is noteworthy that of class V lesions that female patients recorded higher percentages of all classes of dental caries than male but in distribution of class V carious lesion among males happened to lead females as: male 67% and female 33%.

DISCUSSION

The current evaluation is done according to GV Black's classification of dental caries, to study the prevalence and occurrence of dental caries among both genders. The study has been very useful in evaluating the extent for effectiveness of the provided dental treatment. The DMF index has provided the measures of dental caries by methodical evaluation of the number of the permanent teeth that are (A) decayed, (B) missing, (C) filled (DMF). This measure is additive as it adds up the number of restorations and extractions in surplus

Graph 1: Distribution of carious lesions according to gender

Graph 2: Distribution of carious lesions according to site
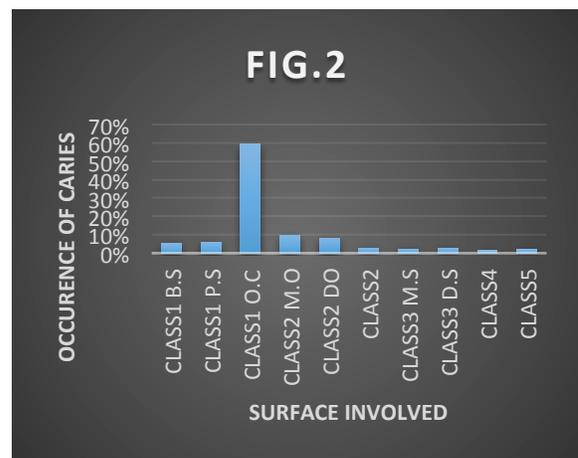
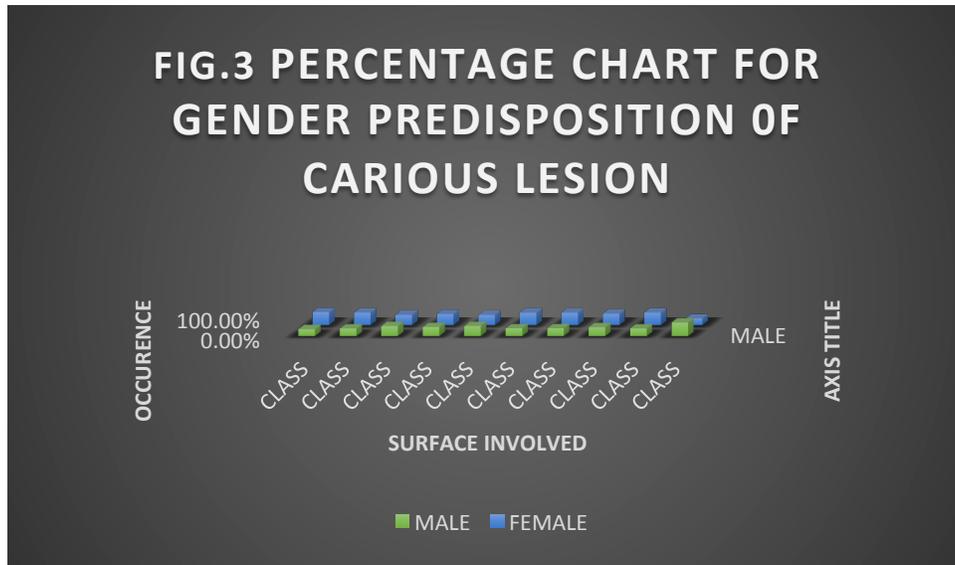Graph 3: Caries distribution according to site and gender

Table 2: Percentage Chart For Gender Predisposition 0f Carious Lesion

CARIOUS LESION	MALE	FEMALE
CLASS1 B.S	34.50%	64.50%
CLASS1 P.S	38.20%	61.80%
CLASS1 O.C	49.90%	50.10%
CLASS2 M.S	45%	55%
CLASS2 D.S	49.80%	50.20%
CLASS2 M.O.D	38.60%	61.30%
CLASS3 M.S	39.10%	60.90%
CLASS3 D.S	43.90%	56.10%
CLASS4	38.20%	61.80%
CLASS5	67%	33%

to the number of teeth having active dental carious lesions. DMF scores should not to misjudge as the prevalence of the caries is overstated (7). According to the present study, Class I Buccal Surface was involved in 46 (5.5 %), Class I palatal Surface was involved in 52 (6.1 %), Class I Occlusal Surface was involved in 501 (59.4%), Class II Mesio-Occlusal (MO) was involved in 82 (9.7 %), Class II Disto-Occlusal (DO) was involved in 70 (8.3 %), Class II Mesio-Occlusal-Distal (MOD) was involved in 23 (2.7 %), Class III Mesial surface was involved in 19 (2.3 %), Class III Distal surface was involved in 24 (2.7%), Class IV 11 (1.3 %) and Class V 17 (2%) were reported A basic, practical and appealing method of GV Black's classification is used as it clearly differentiates between cavitated and non-cavitated dental lesions. Also this method is more simple and straight forward. The result of this study revealed that class I occlusal surface carious lesions were way more (%) with respect to any other classes of carious lesions. (8) It was also reported that female had a high caries index as compared to males except for class IV and class V carious lesions (9) (10). Now this can be agreed upon that the hormonal alteration and pregnancy have a direct impact on the quantity and quality of saliva leading to poor oral health. The physiological mechanisms show clear and well established correlation between oral health of female and occurrence of carious lesion; more in females than in males. Studies also suggest that a sex linked gene might explain, why dental caries are higher in women. (11). The gene Amelogenin X which occurs on the X chromosome and also Amelogenin Y , stand responsible for production of proteins that comprise 90% of the enamel matrix.(12)

CONCLUSION

The present study happens to record highest prevalence of class I carious dental lesions as compared to other classes of carious dental lesions according to GV Black's classification. Whereas carious lesions of class IV and class V type were in least percentages. Among the gender prevalence study shows that females are more prone to dental caries than males.

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