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DENTAL CARIES OCCURRENCE, TYPES AND OCCURRENCE OF TRAUMA TO ANTERIOR TEETH, THEIR SEVERITY IN RELATION TO PULPAL INVOLVEMENT IN PATIENTS VISITING O. P. D. OF GOVT. DENTAL COLLEGE AND HOSPITAL, AURANGABAD

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ABSTRACT: BACKGROUND: It has been noted that occurrence of different types of caries and traumatic dental diseases varies according to region. There was no significant literature available about occurrence of these dental problems in Aurangabad city (Maharashtra). Studying occurrence of these dental conditions will help in assessing dental health care needs of people in this region. **OBJECTIVES:** 1) To find out proportion of different types of caries and traumatic dental diseases identified in patients visiting the out-patient Dept. (OPD), Department of Conservative Dentistry. 2) To study the types and occurrence of caries and to study severity of caries in relation to pulpal involvement. **STUDY SETTINGS:** Out-patient Department (OPD), Department of Conservative Dentistry, Government Dental College and Hospital, Aurangabad, Maharashtra, India. **STUDY DESIGN:** Hospital based cross sectional observational study. **STUDY POPULATION:** Patients aged 10 years and above, attending dental OPD. **METHODOLOGY:** By systematic random sampling 1000 patients were selected, type of dental problems were recorded and analyzed. **RESULTS:** A total of 2656 teeth were affected by dental caries. Number of teeth having Class I caries were 855 (32.19%), number of teeth having Class II caries were 748 (28.16%), number of teeth having Class V caries were 120 (4.51%), number of teeth having caries involving pulp were 632 (23.79%), while number of teeth that were grossly destructed and could not be saved were 301(11.33%) Total numbers of anterior teeth affected by traumatic injury were 60. Out of which 48 teeth (80%) had injuries involving pulp, while no pulpal involvement was seen in 12 teeth (20%). **STATISTICAL ANALYSIS:** MS Excel.

KEYWORDS: Dental caries, trauma, dental health.

INTRODUCTION: Oral health is an integral component of general health and is essential for wellbeing. There is evidence to prove the interrelationship between oral and general health.^[1]

Many general health conditions have oral manifestations that increase the risk of oral disease which, in turn, is a risk factor for many systemic diseases, such as diabetes, cardiovascular diseases, etc. However, the wider meaning of oral health does not diminish the relevance of the two globally leading oral afflictions: dental caries and periodontal diseases. Despite great successes in improving the oral health of populations globally, problems still remain in many communities around the world, particularly among the underprivileged groups in developing countries.

Dental caries and periodontal diseases have historically been considered an important component of the global disease burden. Both can be effectively prevented and controlled through a combination of community, professional, and individual actions. Early detection is important for

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control of the caries & other oral conditions. A thorough naked-eye oral examination with adequate light can identify many oral conditions in the early stages.

Dental caries is the major oral health condition in developing countries, affecting 60-90% of the school children and the vast majority of adults.^[2] In India, the prevalence of dental caries is reported to be 50-60%.^[3] Most of the Indian studies that have been published focused on school children^[4-9] and only a few studies have been done among adults.^[10,11]

Therefore, keeping in mind the paucity of literature on dental problems in adults and the public health importance of dental caries, this study was planned to provide some information on the oral health needs of the adult population in Aurangabad.

OBJECTIVES:

1. To find out proportion of different types of caries and traumatic dental diseases identified in patients visiting the out-patient Dept. (OPD), Department of Conservative Dentistry.
2. To study the types and occurrence of caries and to study severity of caries in relation to pulpal involvement.

MATERIALS AND METHODS: A hospital based cross-sectional observational study was carried out in the Dental O.P.D of the Dept. of Conservative Dentistry & Endodontics, Government Dental College and Hospital, Aurangabad city (Maharashtra). Data was collected from July 2013 to January 2014 from adolescent and adult patients attending the Dental O.P.D.

DATA COLLECTION: Data was collected in the predesigned, semi-structured schedule. Dental diagnosis by qualified dentists, on the O.P.D case paper was recorded. Common dental problems included were dental caries, trauma to anterior teeth and severity of caries and trauma in relation to pulpal involvement. A total number of 1000 subjects were examined.

Time taken for completing each schedule was on average 10 minutes. Daily O.P.D. attendance of adolescent and adult patients in this dental O.P.D. was 50-60 per day. During O.P.D. hours observations in 10 patients per day were recorded and examination was taken 5 days a week.

EXAMINATION: Dental examination was conducted with the use of mouth mirror, probe, explorer, tweezers, personal protective barriers (gloves, masks) and cotton roll. Source of light was light of dental chair unit.

Data regarding type of dental caries on individual tooth was recorded. Caries were classified as Class I, Class II, Class V according to G.V. Black classification and teeth with pulpal symptoms or having exposed pulp due to caries were recorded in separate column. Teeth having poor prognosis and indicated for extraction were noted in another column. The tooth was considered carious if there was visible evidence of a cavity, including untreated dental caries. Radiographs were taken during the study if required.

Data regarding traumatic injuries to anterior teeth involving pulp or without involving pulp were recorded in separate column. Both recent as well as subjects having history of trauma previously to anterior teeth were included in study. Both radiographs as well as vitality testing were performed if required during study.

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By systematic random sampling every fourth patient was examined after taking consent, if patient was unwilling, next patient was examined.

Statistical Analysis: Data entry was done in MS-EXCEL.

RESULTS: This study was carried out on total 1000 patients. A total of 2656 teeth were affected by dental caries. Number of teeth having Class I caries were 855 (32.19%), number of teeth having Class II caries were 748 (28.16%), number of teeth having Class V caries were 120 (4.51%), number of teeth having caries involving pulp were 632 (23.79%), while number of teeth that were grossly destructed and cannot be saved were 301(11.33%) as shown in Table no.1

Total numbers of anterior teeth affected by traumatic injury were 60. Out of which 48 teeth (80%) had injuries involving pulp, while no pulpal involvement seen in 12 teeth (20%) as shown in Table no.2

DISCUSSION: According to the World Health Organization (WHO) the "Promotion of oral health is a cost-effective strategy to reduce the burden of oral disease and maintain oral health and quality of life. It is also an integral part of health promotion in general, as oral health is a determinant of general health and quality of life."

Dental caries is a common dental disease occurring during childhood and also in adults. Despite incredible scientific advances and the fact that caries is preventable, the disease continues to be a major public health problem.

The World Health Organization (W.H.O) has ranked it as number three among all chronic non-communicable diseases that require worldwide attention for prevention and treatment.⁽¹²⁾ Moreover, decayed teeth are particularly harmful to children's growth and development, and can severely jeopardize health of children as well as adults.

Therefore, it is advocated that efforts to improve the overall situation are still highly indicated.⁽¹³⁾

The present study was a cross-sectional study carried out to assess the most common dental problems in patients visiting OPD in Dept. of Conservative Dentistry. Also to assess occurrence, type of caries, occurrence of trauma to anterior teeth and their severity in relation to pulpal involvement.

Most prevalent caries type was Class I caries (32.19%) followed by Class II caries (28.16%), followed by Class V (4.15%).Teeth with pulpal involvement (23.79%) in any type of caries, while % teeth indicated for extraction due to caries were considerably higher (11.33%) and is a cause of concern in relation to awareness of people of Aurangabad about dental caries.

Difficulties in chewing, pain during eating and spontaneous pain were three major causes why people in the city seek dental treatment.

80% of teeth sustaining traumatic injury had pulpal involvement while 20 % teeth had no pulpal involvement. This study was particularly important because, no study was performed previously in this area to know the kind of dental problems people of this city usually face and their awareness about dental health.

Here are some recommendations to positively influence dental awareness and preventive dental care:

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1. Regular dental health education and training camps should be conducted in all strata of societies.
2. Regular oral health screening should be made mandatory along with general medical check-up.
3. Systematic community-oriented oral health promotion programmes are needed to target lifestyles and the needs of people.

CONCLUSION: Study suggests that, Class I caries has maximum occurrence while class V caries has least, occurrence of trauma to anterior teeth involving pulp is considerably higher than without involving pulp. Severity of carious teeth involving pulp was higher, near about one fourth (23.79%) of total caries affected teeth (excluding teeth indicated for extraction).

Therefore, the best way to keep teeth healthy is to ensure cleaning them regularly, at least twice a day, to get rid of any plaque. It is also important to have a regular check up by the dentist, once every 6 months to one year.

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Fig. 1

Fig. 2

TYPE OF CARIES	NUMBER OF TEETH	IN %
CLASS I	855	32.19
CLASS II	748	28.16
CLASS V	120	04.51
INVOLVING PULP	632	23.79
INDICATED FOR EXTRACTION	301	11.33
TOTAL	2656	100

Table No. 1

TRAUMA	NUMBER OF TEETH	IN %
INVOLVING PULP	48	80
NOT INVOLVING PULP	12	20
TOTAL	60	100

Table No. 2

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