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RESEARCH ARTICLE

PERIODONTAL DISEASES PREVALENCE AMONG PATIENTS ATTENDING THE OUTPATIENT DEPARTMENT AT THE COLLEGE OF DENTAL SURGERY, NOBEL MEDICAL COLLEGE TEACHING HOSPITAL, BIRATNAGAR, NEPAL.

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Key words:-
Prevalence, gingivitis, periodontitis.

Abstract

Aims:- To find the prevalence of periodontal disease among patients attending the Outpatient Department at the College of Dental surgery, Nobel Medical College Teaching Hospital, Biratnagar, Nepal

Methods:- Random data were collected from the patients record files of the College of Dental surgery, Nobel Medical College Teaching Hospital who attended from 1st June to 31st May, 2015.

Results:- Among 3000 patients mean age 32±13 (range 11~70) years, males 83.33% and females 16.66%, were found sufferers ofdifferent types of periodontal diseases i.e., gingivitis and periodontitis. Gingivitis cases were found 2050(68.33%), in which mild gingivitis was 1027 (50.09%), moderate gingivitis 938 (45.75%), severe gingivitis 39 (1.90%), acute gingivitis 10 (0.48%) and puberty gingivitis 36 (1.75%). Total number of patients affected with various forms of periodontitis was 1200 (40%), in which mild periodontitis was 688 (57.33%), moderateperiodontitis 439 (36.58%), severe periodontitis 52 (4.33%) and aggressive periodontitis 21 (1.75%). The prevalence and severity of gingivitis wasfound increased with age to a peak in the 21~30 years age group, whereas, periodontitis increased significantly ($p<0.001$) in subjectsabove the age of 40 years.

Conclusion:-Using the research results, a greater effort can be made in providing periodontal health to the population of at or aroundthe city of Biratnagar,Nepal.

Introduction:-

Periodontitits is a dental disease characterized by an ongoing infection and inflammation in the gingiva and the destruction of tissue attachment and bone surrounding teeth. It is the main reason for tooth loss. Traditionally, it was thought that only inadequate oral hygiene and calculus deposits predispose and complicate an individual's periodontal condition.[1,2]Periodontitis is also closely related to coronary heart disease and type 2 diabetes. Findings support the association between cardiovascular disease and periodontitis.[3] Diabetes is another well recognized risk factor for periodontitis.[3,4]Approximately 31% of Nepali age 35-44 years surveyed in a study had developed deep periodontal pockets. This ranks Nepal as one of the top 15% of the countries in the world where this age group

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suffers from deep periodontal pocketing. Aetiology being Poor oral hygiene, use of tobacco products, malnutrition, psychosocial factors, compromised immune system and poverty are some of the risk factors for periodontal diseases.[5]

In a country like Nepal the prevalence of different dental disease is not fully explored and documented. But the pattern of dental disease has been changing with the implementation of different preventive procedures and preservation of maximum tooth structure as possible.[6]In spite of this, dental caries and periodontal diseases are still the major cause for extraction, though their relative contribution to tooth mortality varies from place to place[7,8,9]. A similar study in central Nepal showed high prevalence of periodontitis and gingivitis.[10]Since no study has been done regarding the prevalence of periodontitis in the eastern region of Nepal as such. Literature in this regard has been lacking in the Nepalese population and hence the need for the present investigation.

Aims and Objectives:-
To find the prevalence of periodontal diseases among patients attending the Outpatient Department at the College of Dental surgery, Nobel Medical College Teaching Hospital, Biratnagar, Nepal.

Research Hypothesis:-
In a country like Nepal a very limited number of epidemiological studies havebeen carried out to determine the prevalence of oraldiseases.[2] The prevalence is the number of cases in a designatedpopulation at a given point. Any prevalence informationmust be interpreted in light of the population studied. Itwas the first effort of the College of Dental surgery,Nobel Medical College Teaching Hospital toconduct a research regarding periodontal statusamong the dental patients thatattended the OPD from1st June 2014to 31st May, 2015. Three thousand (3000) dental patientswere randomly selected from the College of Dental surgery,OPD, Nobel Medical College Teaching Hospital, Biratnagar. Using the research results, a greater effortcan be made in providing periodontal health to thepopulation at or around the city of Biratnagar, Nepal.

Subjects and Methods:-
A retrospective study was performed involving 3000 patients who were attending the College of Dental surgery outpatient clinic, Nobel Medical College Teaching Hospital during the period of 1st June 2014 to 31st May, 2015. Ethical approval was obtained from the Institutional Ethical Review Board of Nobel Medical College and Teaching Hospital.

Periodontal disease is defined as having at least oneperiodontal site with 3 millimeters or more ofattachment loss (CAL) and 4 millimeters or more ofpocket depth (PPD). Using the American Academy ofPeriodontology (AAP) definition of moderate andsevere periodontitis: Moderate periodontal disease isdefined as having at least two teeth with interproximalCAL of 4 millimeters or more at least two teeth with 5millimeters or more of PPD at interproximal sites.Severe periodontal disease is defined as having atleast two teeth with interproximal CAL of 6 millimetersor more and at least one tooth with 5 millimeters ormore of PPD at interproximal sites. In this study,random data were collected from the patients recordfiles that attended from 1st June 2014 to 31st may,2015 where periodontal diseases were indexed asplaque index (PI), gingival index (GI), calculus index(CI) and clinical attachment loss (CAL) afterLoe H[11] and modified fromRussel AL[12].

Data analysis:-
Data will be analyzedusing SPSS version 16 and Chi-Square test will be used to determine the association of BMI with periodontitis. The significance value was setas $p<0.05$.

Results:-

Three thousandrecord files in the OPD, College of Dentistry, werechecked for the presence of periodontal diagnosis ofwhich all were sufferers of different forms of periodontaldiseases. Average age of the patients was 32±13 (range11-70) years. Males were 2500(83.33%), mean age32.1±50.9 (range11-70) years and females, 500(16.66%), mean age 34.1± 33.9 (range 12-70) years(Table -1) indicating a clear predilection ($p< 0.001$) inthe male patients. Out of 3000 patients, 2050 (68.33%),mean age 26±26.8 (range 11-70) years, were foundhaving various forms of gingivitis. They were diagnosedas chronic generalized mild gingivitis 1027 (50.09%), moderategingivitis 938 (45.75%), severe gingivitis 39 (1.90%), pubertygingivitis 36(1.75%) andacute gingivitis 10(0.48%) (Table 2).The prevalence and severity of chronic mild andmoderate gingivitis found increased with age to a peakin the 21-30 years age group and dramatically declinedin the 31-40 years age group, suggesting that gingivitiswas prevalent ($p<0.001$)

among the adolescents.Whereas, patients diagnosed with periodontitis were1200(40%), mean age 42.8±7.7 (range 11-70) years,chronic generalized mild periodontitis 688(57.33%), moderateperiodontitis 439 (36.58) %, severe periodontitis 52(4.33%) andaggressive periodontitis 21(1.75%), were found increasinggradually with age and predominantly above the age of40 years with chronic generalized moderateperiodontitis being more common among that age group($p<0.001$).

Table 1:- Total number of patients and periodontal disease.

Total no. Of patients	Total patients with gingivitis	Total patients with periodontitis
3000 **Male = 2500** **(83.33%)** **Female = 500** **(16.66%)**	**2050** **(68.33%)**	**1200** **(40%)**

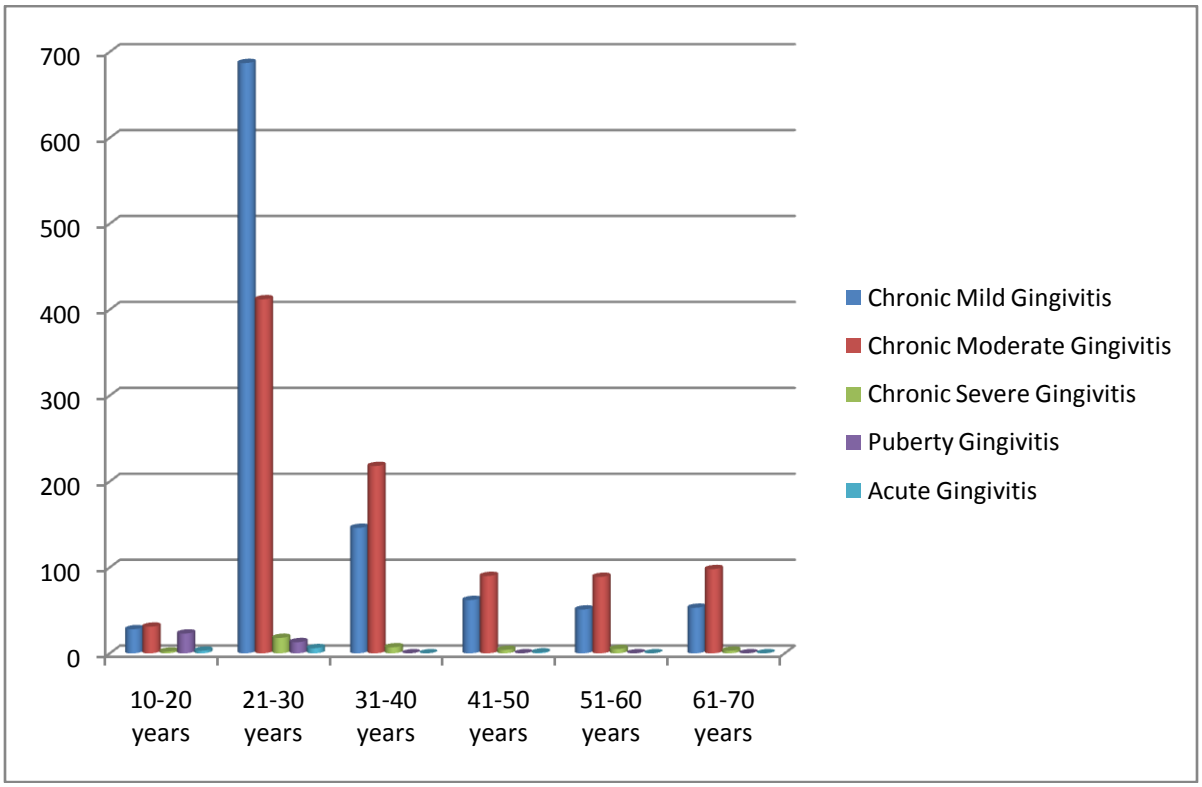

Table 2:- Distribution of different types of gingivitis according to age group.

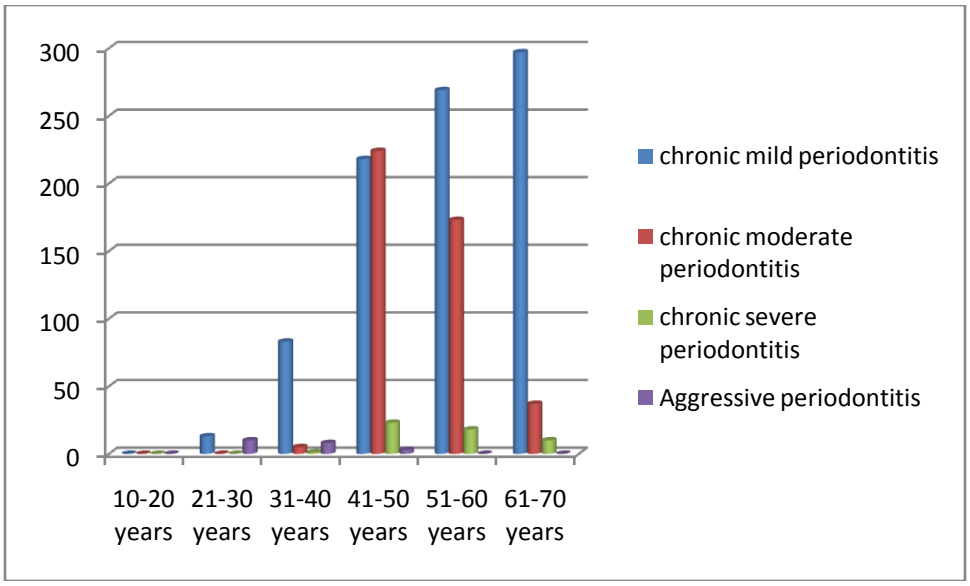

Table 3:- Distribution of different types of periodontitis.

Discussion:-

A great number of populations were found suffering from gingivitis and periodontitis. Most probable cause might be because Biratnagar is a city located in tarai(plain) region of Nepal where habitual chewing of tobacco and its products, betel nut chewing, pan, gutkha, etc is very common and as we know that these products are the most common risk factors of periodontal diseases.

The different forms of gingivitis were prevalent significantly in adolescents which may be because people here in terai region start chewing tobacco and its products like gutka and paan at an early age and by the time they become adolescents, the effect of those products becomes clearly evident.

The population mostly studied have been hospital based population because of the convenience. The prevalence assessed among these types of samples will be higher than that assessed among general population.

Oral hygieneindices (PI, GI, CI and CAL) were measured after LoeH (1967) that delineated an alarmingsituation of poor oral hygiene care taken by thepatients of at or around Biratnagar city. Female patientswere attended a few in number (16.66%) that might bea reflection of that the women were not much aware ofvisiting even the nearby dental hospitals.

Although same types of studies have been done in different parts of the world but similar studies in this part of Nepal is lacking and further studies are required to measure the accurate prevalence of periodontal disease in this region of Nepal.

Conclusions:-

Using the research results, a greater effort can bemade in providing periodontal health to the populationof at or around the city of Biratnagar.More oral health awareness programs and school health programs need to be carried out to motivate people regarding better oral health. There is need for planning of regional or national oral health promotion programs, to prevent and treat oral health problems. Afurther broad scale study is needed to measure anaccurate prevalence of periodontal diseases amongthe patients of College of Dental surgery, OPD, Nobel Medical College Teaching Hospital, Biratnagar.

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