

Adverse Effect of Periodontal Disease on Quality of Life

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Abstract

Periodontal disease represents various chronic inflammatory state of marginal, attach and free gingiva around the tooth, alveolar bone, various types of periodontal ligaments which attach the tooth to the bone or anchorage system of tooth, all are tooth-supporting system. The disease of supporting the structure of the tooth starts from a mild form of gingival inflammation. The use of smoke tobacco is a topmost modifiable risk factor for severe periodontal disease. The use of smoke tobacco has various links with periodontal disease severity. From the various survey it is found that periodontal condition is worst among Smoked tobacco users than non-users. Giving proper treatment to various periodontal diseases is a great challenge, because at the early stage same patients are not aware of these things. To date there is not some bleeding from gum, mild pain maximum patient doesn't aware of these things. When bleeding from gum during hard food chewing, hard or normal brushing patients reports complain. Gingivitis periodontitis like disease are non-violent, some time asymptomatic but they have a negative impact on mastication, esthetic of individuals. Sometimes it has effects the speech of people. Disruptions in the function of neutrophils can lead to develop gingivitis periodontitis. Down syndrome, neutropenia can lead to periodontal disease. Developing age can leads to periodontitis.

Keywords: *Periodontal Disease; Quality of Life; Adverse effect.*

Introduction

Periodontal disease represents various chronic inflammatory state of marginal, attach and free gingiva around the tooth, alveolar bone, various types of periodontal ligaments which attach the tooth to the bone or anchorage system of tooth, all are tooth supporting system. Disease of supporting structure of tooth starts from mild form of gingival inflammation. Gingivitis occurs due to retention of dental plaque due to various bacterial activities. When gingivitis remain untreated for a long time period it converted to severe periodontitis, which leads to loss of alveolar bone, periodontal ligament, recession of gingiva. Periodontal pocket is a tread mark of the periodontal disease, which latter became the main reason for tooth loss. All types of periodontal disease has linked with type I,II diabetes and various heart disease.¹⁻³

Periodontitis is two types one is generalized when affected percentage tooth segment is minimum thirty

percent and another is localized when affected tooth segment is less than thirty percent or less number of teeth are affected. Retention of biofilm is the main cause of gingivitis or periodontitis but the rate of progression of the disease depends on the host factor of oral environment and various genetic factors. In recent days the periodontal diseases has big hand in contribution of etiologic factors. The main objectives of our article are diagnosis, preventive measure and treatment plan for various periodontal disease. This article mentions the difference between gingivitis and various forms of periodontitis.

Periodontitis mainly found in elder people, but rarely found in children. The loss of tooth supporting structure due to periodontitis depends on amount of plaque deposition, risk factors present in that person and immunity capacity. Main identifying feature of various periodontitis is pocket formation and alveolar bone loss, but the bone loss pattern is not uniform. Periodontitis case definition depends on the disease progression,

magnitude of disease (attachment loss, size of pocket, loss of alveolar bone). Most commonly use definition of severe periodontitis depends on both loss of attachment and size of pocket (mainly depth) recommended by CDC (center of disease control).

From the data of various study says that severe periodontitis is due maximum loss of tooth supporting structure, which has great role in tooth loss around fifteen percent worldwide.⁴⁻⁷

Risk factors for periodontal disease: Risk factors are mainly two types modifiable and non modifiable. Use of smoke tobacco is a top most modifiable risk factor for severe periodontal disease. Use of smoke tobacco has various links with periodontal disease severity. From the various survey it is found that periodontal condition is worst among Smoked tobacco users than non-users. Most of the smoke tobacco users found with no sign of bleeding from gingiva and no sign of gingival inflammation as compared normal individual. The main cause behind this is hyper keratinization of gingiva.^{8,9,10}

Type I, II Diabetes is most common in people with long term systemic diseases, which make susceptible these kind of people to periodontal diseases. Percentage and Severity of periodontal disease grows in people with prolong DM (DIABETES) mainly patient with uncontrolled DM. periodontal disease has negative impact on metabolism of patient with DM. it also has negative effect on inflammatory response and synthesis of insulin. Adverse effect of diabetes found on tooth supporting structure of some young patient suffering with DM I, II.

A study report from USA gives data that less education, illiteracy, low financial conditions among Africans and Mexican citizen have worst periodontal health.^{11,12,13,14}

Periodontal disease like gingivitis, periodontitis begins due to bacterial activities of bio-film. Around eight hundreds of bacterial species found in dental bio film till now. Multiple Gram -ve bacteria or unit of pathogen leads to periodontal disease.

Microbial biofilm: Severe form of periodontitis has close link with special colonies of *Aa (Aggregatibacteractinomycetemcomitans)* in longitudinal studies. *Porphyromonasgingivalis* has also link with periodontitis. But till date it is not cleared about the relationship among changing structure of dental plaque and mild to severe periodontitis.^{15,16}

Many people have suffered from various viral diseases through out their life. After a Long time from cure of the disease the viral deoxyribo nucleic acid and ribose nucleic acid found from the body. The contribution of virus in development of periodontitis is in controversy till now. Antiviral drugs decrease the measurement of depth of periodontal pockets and gingival swelling.^{17,18,19,20}

Supra-gingival and sub-gingival calculus contains biofilm. Supra-gingival calculus found above the gum margin and its color is yellowish white. Sub-gingival calculus found below the margin of gum and its color is greenish. The sub-gingival calculus is more calcified and not easily removed. Ca and phosphate ion present in saliva form the supra gingival calculus. Serum transudate calcified the the subgingival calculus.²¹

Pathogenesis of periodontal disease: Dental biofilm alone can not be the causative factor for periodontitis or gingivitis. When the equilibrium is lost in between dental plaque and host body the gingivitis starts. Various changes found in biofilm, genetics of host body which leads to severe periodontitis and severe gingivitis. Epithelial tissue act as barrier to the harmful pathogenic organism. Lagerhans cell reside in the epithelium presents lymphoid cell against lymphocyte.²²

Role of T cells: When lymphocyte arrives at damage point, the cell mainly B category converted to antibody generating cell. The capacity of antibody against severe periodontitis depends on antibodies strength and number. T cell has some hand in cell mediate immune reaction. T cell done it by the help of T helper cell by stimulating them. T1 and T2 cell has great contribution in development of periodontitis at starting point of periodontitis and on latter stage of periodontitis respectively.²³

Susceptibility: All types of gingivitis Mild, moderate severe are reversible in nature. But in some case it converted to mild to severe periodontitis. Maximum studies gives data that in those individual who don't have any kind of gingivitis have excellent periodontal status for a long period of time. From data of some studies says that if some individual stop his/ her regular brushing constantly for minimum twenty one days he or she will develop mild gingivitis due to formation of plaque or biofilm. Maximum individual develop different kinds of gingivitis according to formation of dental plaque and inflammatory response. Another fact

is that inflammation of gingival also depends on quality of individual. Some case inflammations also depends on some genetic elements.

No such elements are there for act as resistance to periodontitis or gingivitis. The inflammatory mediators like interleukin1, TNF has linked with destruction of periodontal supportive structure. This inflammatory factors speed up the inflammatory processes. Many drug like nifedipine, phenytoin can cause mild to severe gingival growth. Various changes found in secretion of body hormone can leads to periodontitis.^{24,25,26,27,28,29}

Genetics in periodontal disease: Participation of various genetic factors in long periodontal disease has studied in various survays. Survey among young Indonesian people gives data that young people don't develop any kind of periodontal disease with out taking any oral care facilities, only genetics factor plays a great role in this aspect. Various genes plays a key role in developing periodontal disease like periodontitis

Diagnosis of periodontal disease: Giving proper treatment to various periodontal diseases is great challenge, because at the early stage same patients are not aware about these things. Till date there is not some bleeding from gum, mild pain maximum patient doesn't aware about these things. When bleeding from gum during hard food chewing, hard or normal brushing patients reports complain. Mild to severe periodontitis is found with clinical sings like bleeding, loss of stippling on attached gingival, marginal gingival position apical to CEJ, rolled out margin, gingival enlargement, color of gingival changes from pale pink to red, ginhival sulcus depth increase more than 4mm, grade I to grade III mobility found. Mild to severe pain also noticed due to pus discharge. Hallmark periodontal diseases are most of the time with out any pain.³⁰

Chronic generalized periodontitis is clinically detect by LOA (loss of attachment), amount of bleeding during clinical procedure, pocket depth more than 4mm. and by IOPAR, OPG.

After detection of diseases the dentist remove the dental calculus, plaque and educate the patient how to mentain the oral hygiene. Mostly patient is advice to avoid the risk factors like chewing tobacco, smoking tobacco etc. These are modifiable risk factor and in the hand of individual. Knowledge and willingness of patients has a great hand on mentainance of oral hygiene and treatment of this disease.

Many people develops periodontal disease due to deposition of biofim and some doesn't develop periodontal disease this is due to resistance capacity difference in both type of people. In some case periodontitis growth is rapid and in some individual growth is very slow. In another case it is found that various site of gingiva has great hand on progression of mild to severe periodontal disease.

Regular oral screening programme is very essentital for diagnose the periodontal disease at starting stage. Curing of mild gingivitis at early stage can halt the progression of converting mild gingivitis to periodontitis. Education regarding oral hygiene health can be beneficial In prevention of periodontal disease. Patient with absence of risk factors has very less chance of developing periodontal disease.³⁰⁻³⁴

Treatment of mild, moderate, severe gingivitis can be done by hand scaling or ultrasonic scaling. All biofilm and supra subgingival calcalculus are removed by scaling. By scaling the etiological factor for developing periodontal disease reduced. Self care home therapy is very use full in minimize the chance for developing disease. Various types of drug (doxycycline) can use in the treatment of periodontal disease.

Gingivitis periodontitis like disease are non violent in nature, some time asymptomatic but they have negative impact on mastication, esthetic of individual. Some times it has effects the speech of people.

Disruption in the function of neutrophils can leads to develop gingivitis periodontitis. Down syndrome, nutropenia can leads to periodontal disease. Developing age can leads to periodontitis.³⁰⁻³⁴

Conclusion

Use of smoking tobacco diabetes mellitus type I,II are main modifiable risk factor for developing gingivitis and periodontitis. Various risk indicators for periodontal diseases are bacteria like porphyromonas G, tannerella F, Aa. Predisposing agents for developing gingivitis ,periodontitis are the use of smoke tobacco, smokeless tobacco, the physical status of the individual, uncontrolled DMI,II, excess mental stress, less intake of Ca and Vit-D,

Modifiable risk factors are in the hand of individual they can modify easily and the disease condition can be minimize. But it is very difficult to take control over the

non modifiable risk factors like genetic agents. Excellent diagnosis of periodontal disease has a key role in the proper management of periodontal disease. Because in country like India the prevalence of periodontal disease is more among all age groups. Various types of nutrition has great effect on periodontal disease in elder age groups. The main objective of differential diagnosis of periodontal disease, advanced treatment plan, knowledge can reduce the chance of further advancement of the disease which, would latter affect the QoL of individual. The gravity of any kind of gingivitis or periodontitis depends on various internal and external environment agent. Good prognosis depends on the quality of the drug, immune power of individual.

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