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Review Article

A literature review on various factors associated for periodontal disease

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ABSTRACT

Maintaining oral hygiene is the key factor of maintain good oral health, which includes the health of the gingival tissue and the health of the periodontal tissue and avoiding adherence of plaque on the tooth surface. There are many methods through which oral health can be maintained, which includes mechanical methods along with chemical methods. The most common problem associated with the oral cavity tissue are the periodontal problems, furthermore there are so many factors that are associated with the progression of the periodontal disease. This article discuss the various associated factors that helps in progression of the periodontal disease.

1. Introduction

The most common disease found in the oral cavity is the periodontitis. Periodontitis is characterized by the destruction of the soft tissue of the oral cavity along with the hard tissue of the oral cavity which is followed by the inflammatory response from the host secondary to the infection.[1,2] It is stated that almost every type of periodontal disease occurs as a result of infection which is caused by mixed micro organisms along with it specific of group of pathogenic bacterias co exist.[3–5] It was stated that severe form of periodontitis that might result in loss of tooth structure is found in 5 to 20 percent in most of the adult population through out the world.[6,7]

2. Various Risk Factors that are Associated with the Periodontal Disease

2.1. Microorganisms

In the oral cavity more than 400 different types of microorganisms are found in the subgingival plaque. The micro flora in the subgingival plaque can harbor hundreds of species of bacterias but only very small number of bacterias has been associated with the progression of the periodontal disease. Gram negative anaerobic bacterias and spirochetes are the main harbors of the sub gingival plaque from the deepned periodontal pocket areas. Evidence shows that porphyromonas gingivalis and Aggregatibacter actinomycetemcomitans was found to be the main pathogens for the progression of the adult periodontitis. along with it some other bacterias like bacteroides forsythus, prevotella intermedia, peptostreptococcus micros, along with it fusobacterium nucleatum found to be helpful in the

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progression of the adult periodontitis.[8–14]

2.2. Smoking

Smoking is found to be having strong co relation between the rate of tobacco smoking and the progression of the periodontal disease. Literature revealed that there is higher level of periodontitis with the people who smoke tobacco.[15] literature stated that smoking of tobacco exerts a slow and destructive effect on the periodontal tissue and helps in the rapid progression of the periodontitis. Smokers those are having periodontal disease shows less signs of inflammation that is clinically visible along with less bleeding tendency of the gingiva when compared to the non smokers which is because of nicotine that is present in the tobacco, and nicotine exerts vaso constriction action which results in vasoconstriction and results in less blood flow less edema and less clinical signs of inflammation. Literature revealed that nicotine acetylcholine receptors plays an important role in the development of nicotine related periodontitis.[16,17]

2.3. Diabetes mellitus

The signs of diabetes mellitus can be seen orally in the oral soft tissue in the form of inflammation if the gingivitis i.e. gingivitis and periodontitis. literature revealed that there is close co relation between the those who are having diabetes mellitus and the occurrence of periodontal disease. Those patients who are having uncontrolled diabetes mellitus are at a higher risk of periodontal diseases. On a vice versa note there is rapid progression of periodontitis in the patient having uncontrolled diabetes mellitus. Periodontal treatment is the treatment option of choice, but the prognosis of periodontal therapy depends upon the levels of blood sugar.[18–21]

2.4. Cardiovascular disease

Periodontal disease has the capability of predisposing to vascular diseases because of rich source of sub gingival microorganisms and due to host response. Bacteria's associated with periodontitis and other dental disease found to be the primary cause of cardiovascular disease i.e. infective endocarditis. Literature stated that periodontitis is associated with increase in the levels of the c reactive proteins along with fibrinogen along with it some evidence suggested that there is increase in levels of inflammation of systemic markers such as c reactive proteins and interleukin 6 that is totally associated with the cardiovascular disease. A study revealed that periodontitis is found to be the progressive as well as independent risk factor for the development of the cardiovascular disease.[22–24]

2.5. Drugs

Some drugs like antihypertensive drugs, narcotics, analgesics, sedative and transquilizers and antihistamine etc. and some drugs like syrups and some chewable tablets that contains sugar in it helps in adherence of the plaque over the tooth surface and also results in alteration of the oral salivary ph making the plaque more adherable to the tooth surface and may results in gingivitis. Some drugs like cyclosporine, calcium channel blockers they might induce gingival over growth.[25]

2.6. Obesity

Obesity is found to be the other predisposing factor in the development of the periodontitis. research revealed that there is altered dietary trends in the young individuals which included more intake of junk food or beverages which contains more sweet constituents in it that result in adherence of plaque over the tooth surface along with change in salivary ph and also helps in gaining of the weight, on the other side there is less intake of raw food or citrus fruit which contains vitamin c. along with it there is less intake of calcium in the young individuals, rather than calcium intake there is more intake of soft drinks. Literature stated that people who take less dietary intake of calcium and vitamin c are more prone to the periodontal diseases.[26,27]

2.7. Osteoporosis

Studies stated that there is direct relationship between osteoporosis and periodontitis. In osteoporosis there is severe alveolar bone loss and occurrence of periodontitis in post menopausal women.[28]

Some other diseases like leukemia shows oral features of alveolar bone loss, damage to the soft oral tissue, as there occur gingival over growth and that gingival over growth is hemorrhagic, i.e. it bleeds to touch.

If there occur any hormonal alteration in the female patient, that might predispose to the periodontitis condition. This condition if occurs, it occurs during the puberty, or during pregnancy or after menopause. The most common change that occur in the soft oral tissue during pregnancy is the pregnancy gingivitis, in this condition there occur over growth of the gingival soft tissue, in severe cases that might bleed after touching. This condition soon disappear after the pregnancy, along with it maintenance of oral hygiene measures is very much required during the whole period. Women on hormonal replacement therapy and women those were on oral contraceptive, experience increases gingival inflammation, it is also reported that prolonged use of oral contraceptive surely affect the periodontium health.[29]

Literature has also been state that periodontitis may also increase the risk of preterm low birth weight infant. This could be due to the effect of biological mediators

of inflammatory process such as prostaglandin E2 and TNF.[30,31]

Different studies also stated that, there is increase risk and severity of periodontitis with increasing age. The increase damaged and severity of the periodontal tissue might be due to the long time of span of the exposure of periodontal tissue to the bacterial plaque.[32]

Studies stated that there more chances of periodontal disease occurring in males as compared to females, there is no exact reason behind this, this condition mightly be occur more commonly in males because male population have more habit of chewing tobacco, and ignorance of oral hygiene measures.[33]

Socio economic status also plays an important role in the development as well as progression of periodontal diseases. Pathological gingival conditions are directly related to socioeconomic status as gingivitis seen most commonly in lower socioeconomic where in case of periodontitis, no such co relation found between the disease and the socioeconomic status.[34]

3. Conclusion

Maintenance of oral hygiene is the key factor to avoid any gingival or any periodontal condition. One should have a thorough knowledge of etiological factors of the periodontal disease and the progression of the disease. Management of periodontal disease requires understanding of associated risk factors for the same.

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5. Conflict of Interest

The authors declare no conflict of interest.

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