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CAUSES AND PREVENTION OF GINGIVITIS: A REVIEW

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ABSTRACT

This article provides a review of the aetiology reasons for gingivitis as well as the prevention strategies that can be utilized to avoid gingivitis illness. This is due to the fact that gingivitis has an impact on the preservation of the structures that are necessary for the practice of dentistry.

KEYWORDS: Oral disease, normal gum, dental caries and periodontal disease**.**

INTRODUCTION

Bacterial infections are the primary cause of the disease, which leads to aggressive problems in gum tissues. It is gingival inflammation in which the tissue attachment to the tooth is still in its original location. The disease only affects the gingival epithelium's delicate, connective tissue. Periodontal infections are typically the cause of gingivitis. Gingivitis may be classified into several types depending on clinical indicators, severity, and duration of infection.[1,2]

1. **Etiology:** Depending on the cause, there are five distinct types of gingivitis.

- **Plaque-induced gingivitis:** The most frequent cause of the illness is gingivitis brought on by dental plaque biofilm. It is defined on the level of the site as "an inflammatory lesion resulting from interactions between the dental plaque biofilm and the host's immune-inflammatory response, which remains contained within the gingiva and does not extend to the periodontal attachment". Reducing dental plaque levels at and apical to the gingival line helps halt this inflammation since it solely affects the gingiva and does not extend beyond the mucogingival junction.[3,4,5]

- **Infectious Gingivitis:** Tooth decay is one of the various oral illnesses that can result in this kind of gingivitis. Plasma cell gingivitis can occur when an allergic hypersensitivity reaction causes plasma cells to invade the gingiva. Red pepper, cinnamon, mint, gum chewing, and certain toothpaste chemicals can all cause allergies. Furthermore, infectious gingivitis may arise from minor damage to the surrounding tissues, such as damaged teeth, obstructive restorations, or extra flanges on a denture.[6,7]
- **Nutritional Gingivitis:** Vitamin C deficiency may be the cause of this. It has been found that the modern lifestyle, which includes eating more refined carbohydrates and a higher proportion of fatty acids, can contribute to the inflammatory process. By activating NFkB and causing oxidative damage, nutrients with a high glycemic index contribute to inflammation.[8,9]
- **Hormones influencing gingivitis:** Gingivitis can arise due to pregnancy, puberty, or steroids. Research has indicated that pregnancy gingivitis is caused by an increase in women's sex hormones during pregnancy.[10] The development of gingival inflammation occurs during adolescence even in the absence of plaque. In medicine, this is called puberty gingivitis. It has been discovered that gingival cells include estrogen and testosterone receptors in their cytoplasm, and these receptors have a strong affinity for both hormones. This particular form of gingivitis might arise due to pregnancy, puberty, or steroids. Pregnancy gingivitis is caused by female sex hormones, which are shown to be in high concentration during pregnancy, according to study.[11] During adolescence, gingival inflammation occurs even in the absence of plaque. This condition is known medically as puberty gingivitis. Gingival cells have been shown to contain estrogen and testosterone receptors with strong affinity for these substances. The layers of the epithelium are especially rich in estrogen receptors. During puberty, gingivitis is known to appear in girls (ages eleven to thirteen) before in boys.[12,13]
- **Gingivitis Associated with Addiction:** Many drugs, including as phenytoin (used to treat epileptic seizures), calcium blockers (used to treat high blood pressure), coagulation inhibitors, and oral contraceptives, can cause gingivitis as a side effect. This leads to the development of gingivitis. Gingivitis may also be brought on by a variety of risk factors. These include the patient's genetics, systemic conditions (like diabetes), personal behaviors (like smoking and chewing tobacco), and local conditions (like dry mouth and full mouth).[14,15,16]

2. **Non-plaque-related gingival disorders including:** Gingival lesions that are not brought on by plaque can account for the wide range of periodontal tissue responses that have been seen. Common plaque-associated gingival diseases can have different clinical features than gingival inflammation. Gingival illnesses that are not caused by plaque (like lichen planus) can be caused by a variety of causes, including bacterial, viral, fungal, and genetic infections as well as mucocutaneous disorders. Medication allergies and trauma-related tooth brushing are additional possible explanations.[17,18]

3. **The gingival tissues distinguish between permanent and primary teeth:** Usually seen at the free gingiva along the coronal aspect of the permanent teeth, the inflammatory lesion occupies a smaller tissue section along the gingival epithelium in the primary dentition. Compared to the permanent tooth, the gingiva's junctional epithelium is thicker in the primary tooth. There may be decreased permeability to bacterial toxins in the epithelial structures of a junctional epithelium with a thicker layer.[19,20,21]

4. **Antimicrobial and chemotherapeutic agents:** Antimicrobial or chemical treatments that prevent oral illness should be used as a supplement to the fundamental home care practices of regular tooth brushing and cleaning. Patients who are unwilling or unable to handle mechanical cleaning may benefit from chemotherapy medications. In addition to mechanical oral hygiene, motivation, and health education, mouthwash usage assisted orthodontic patients in maintaining good dental health. Chemotherapeutic medications may be used as adjuncts in the prevention of gingivitis by changing the composition of plaque in a way that stops health from deteriorating into disease. To effectively eradicate or reduce subgingival plaque bacteria, an antimicrobial agent must first reach the target and then sustain a high enough concentration without being washed away by the gingival crevicular fluid. Despite saliva's diluting action, antimicrobial and antiseptic agents can successfully prevent the accumulation of supragingival plaque. Chewing gum, toothpaste, and varnishes are all ways to administer chemotherapy medications.[22,23,24]

5. **Preventing periodontal diseases:** The prevention of periodontal diseases, including as gingivitis and periodontitis, has been defined as a multi-stage process consisting of primary, secondary, and tertiary components. Primary prevention, which aims to stop disease before it starts, includes the idea of health promotion and protective measures. Fluoridation and dental hygiene education are two examples of these health promotion strategies, which aim to give individuals the confidence to take control of and enhance their own health. In affluent

nations, dentistry has demonstrated efficacy in a number of key preventive domains. improvements in perceptions of the value of oral hygiene and the accessibility of fluoridated water supplies. Prevention of subsequent illness aims to lessen the impact of disease by employing early diagnosis and treatment to stop the progression of illness in its earliest stages. Rehabilitating the functional limitations resulting from severe illness is the main goal of tertiary disease prevention, which also addresses problems like implants and artificial tooth repair.[25,26,27,28]

CONCLUSION

One ailment that can be addressed is oral gingivitis. Pathogenic oral plaque can be managed using a variety of adjuncts to prevent or delay the disease's development. But proper behavioral change is necessary to reduce gingivitis and enhance tooth health. Appropriate oral hygiene techniques that ensure mechanical plaque control remain the key to effective disease management.

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