

Periodontal Disease Linked to Erectile Dysfunction

Mouth acts as a window to a lot of systemic diseases and serves as a port of entry of the various infections that can alter and affect the immune status of the person [1]. Periodontitis is a destructive inflammatory disease of the supporting tissues of the teeth and is caused by specific microorganisms or group of specific microorganisms resulting in progressive destruction of periodontal ligament and alveolar bone with periodontal pocket formation, gingival recession or both. The host responds to the periodontal infections with an array of events involving both innate and adaptive immunity [2]. Periodontal diseases are recognized as infectious processes that require bacterial presence and a host response and are further affected and modified by other local, environmental, and genetic factors. The key organisms that cause periodontal disease were anaerobes including *Aggregatibacteractino mycetemcomitans*, *Porphyromonasgingivalis*, *Prevotellaintermedia*, *Tannerella forsythia*, *Fusobacteriumnucleatum*, *Peptostreptococcus micros*, and *Campylobacter rectus* [3]. Association of periodontal infection with organ systems like cardiovascular system, endocrine system, reproductive system, and respiratory system etc. makes periodontal infection a complex multiphase disease. Inflamed periodontal tissues produce significant amounts of pro-inflammatory cytokines, mainly interleukin1 beta (IL-1 β), IL-6, PGE2, and tumor necrosis factor alpha (TNF- α), which may have systemic effects on the host.

There is a growing body of research that indicates a link between chronic periodontal disease and erectile dysfunction (ED) and the common thread appears to be related to inflammation. Research suggests that ED is related to the damage caused by endothelial dysfunction and the systemic inflammatory changes associated with chronic periodontal disease. A recent study was aimed to evaluate changes in the International Index of Erectile Dysfunction (IIEF) score following periodontal treatment in patients who had severe or moderate erectile dysfunction (ED) and chronic periodontitis (CP). The findings of the study suggest that periodontal treatment can provide additional benefits in the improvement of ED [4]. Another study was aimed for investigating the association of CP with the erectile dysfunction (ED) that also supports that CP had a high association with ED in young adults at 30-40 years [5]. Additional independent clinical trial also suggested that dental health is important as a preventive medicine for ED [6].

With recent advancements of technology and investigations, newer research will open more substantial data that will support the linkage of CP with ED. Dental plaque cannot be eliminated from the oral cavity due to ecological existence of microbiological diversity as biofilm. However, the pathogenic nature of the dental plaque biofilm can be reduced by controlling the mineralization of dental plaque i.e. prevention of calculus formation. A recently conducted clinical study proved that mouth rinse (Periogen[®]) containing tetrapotassium pyrophosphate and sodium tripolyphosphate as the anticalculus agent provides a clinically relevant reduction in calculus formation in subjects with a moderate rate of such formation [7]. The



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key component for combating periodontal disease is elimination of pathogenic organism and prevention of their mineralization. As the process of plaque mineralization matures to dental calculus then it will be more challenging to eradicate mineralized dental plaque from the oral cavity through conventional oral hygiene measures.

Periodontal disease initiated with mild gingivitis if controlled at very nascent stage can prevent the destruction of tooth supporting structures at localized clinical level but also will be able to control the systemic diseases including erectile dysfunction that triggered due to release of pro-inflammatory cytokines. In order to prevent host-immune challenges and to sustain oral biological balance, prevention of mineralization of dental plaque is very much essential that can be accomplished through incorporating anti-calculus mouth rinse like Periogen[®] as an adjunct to tooth brushing.

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