

## Can periodontal disease act as a risk factor for HIV-1 reactivation?

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### ABSTRACT

HIV infection is global health problem of unprecedented dimensions. Periodontal diseases are associated with HIV infection and involvement has been suspected specifically for HIV virus. Reports of increased prevalence of chronic periodontitis in HIV-positive subjects suggest that HIV infection predispose to Periodontitis. But on the contrary, current literature suggests that the course of HIV infection is also modified by the periodontal conditions. Research needs to be done regarding the HIV infection and periodontal health inter-relationship, as it can help in better understanding and treatment by the Periodontist.

**Keywords:** HIV, virus, periodontal pathogens

Sir,  
Periodontal disease has been widely recognized as a chronic disease that leads to progressive destruction of the connective tissue and bone with subsequent tooth mobility and finally tooth loss. An association has been demonstrated between HIV infection and some distinct forms of periodontal infection, i.e. necrotizing lesions. [1] Viruses are known to be immunosuppressive and facilitate establishment of subgingival pathogens and have been detected in the gingival tissue, gingival crevicular fluid (GCF) and subgingival plaque from diseased sites. [1] In actively progressing periodontitis lesions. Higher prevalence of opportunistic microorganisms has been frequently detected in the subgingival flora of HIV infected individuals. [2]

Bacterium *Porphyromonas gingivalis* (*P. gingivalis*), which causes periodontal diseases, may strongly facilitate HIV-1

reactivation via chromatin modification. Scientists from Tokyo-based Nihon University highlight the fact that latently infected cells harbor HIV-1 proviral DNA genomes integrated with heterochromatins, allowing for the persistence of transcriptionally silent proviruses. Hypoacetylation of histone proteins by histone deacetylases (HDACs) is primarily involved in the maintenance of HIV-1 latency by repressing transcription from HIV-1 provirus. These results suggest that periodontal disease could act as a risk-factor for HIV-1 reactivation in latently infected individuals, and might contribute to the systemic dissemination of the virus causing clinical progression of acquired immunodeficiency syndrome (AIDS). [3]

Additional research is required regarding biological issues such as the role of oral immune factors and periodontal disease in the persistency of HIV infection, the

possibility of oral transmission and the re-emerging of HIV infection.

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