

From Plaque to Heart Attack – Is There Connection?

Background

Poor oral hygiene is the main cause of plaque accumulation around teeth, leading to gum disease such as chronic periodontitis. Periodontal disease is a progressive inflammation, leading to damage surrounding dental tissue due to bacterial infections that release toxins and cause inflammatory reactions. It affects approximately 100 million people in the US. Furthermore, scientists think that chronic periodontitis can be considered as a cardiovascular disease risk factor, which is independent of well-known risk factors, such as smoking, hypertension, obesity, diabetes, and hypercholesterolemia. Many studies showed that a connection between two diseases is due to the same bacteria known as *Porphyromonas gingivalis*.

What is *P. gingivalis*?

P. gingivalis is the most pathogenic and etiologic bacteria for chronic periodontitis. It induces a local inflammatory response that results in oral bone destruction. *P. gingivalis* is a non-motile (not capable of movement), Gram-negative, rod-shaped anaerobic (existing in the absence of free oxygen) pathogenic bacterium. Antibodies against *P. gingivalis* have been found in human arteriosclerotic plaque, in heart valves. Therefore, scientists suggest that bacteria found in infected periodontal tissue around teeth can enter the bloodstream (during chewing or brushing) and move to other parts of the circulatory system, contributing to the formation of heart disease such as life-threatening Myocardial Infarction.

Role of the dental hygienist

Many studies establish that poor oral hygiene and dental plaque leading periodontal disease are causal risk factors for heart disease (MI). The role of the dental hygienist is to educate patients about the importance of oral health and how it is connected with overall health. Teaching patients about home care, prevention of periodontal disease, and proper treatment can reduce the risk of developing a heart attack or other CVD. This will provide significant and positive effects for dental hygienists and for patient motivation and awareness.