

Oral and General Health - Exploring the Connection

Research Review December 2009

Associations between Periodontal Disease and Cardiovascular Disease

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Introduction

Evidence has emerged during the last twenty years regarding the association between periodontal disease and cardiovascular disease (CVD).

Cardiovascular disease is a broad term used to categorize any abnormal condition characterized by dysfunction of the heart and blood vessels, and includes peripheral arterial disease and coronary heart disease. Peripheral arterial disease pertains to all diseases caused by the obstruction of large arteries in the arms and legs, while coronary heart disease involves dysfunction of the arteries supplying blood to the muscle tissue of the heart, thereby depriving the heart of sufficient amounts of blood.

CVD is the leading cause of mortality in the United States¹⁻³ and other industrialized countries and is among the major causes of death worldwide⁴. In the US, CVD accounts for 40 percent of all deaths each year; over three-quarters of a million people die each year from CVD. In 2009, cardiovascular diseases are projected to cost more than \$475.3B, including health care services and medications (\$313.8B) and lost productivity (\$161.5B)².

The prominent and widely used Framingham risk score profile for general cardiovascular events encompasses the following sex-specific predictors: age, diabetes status, smoking, treated and untreated systolic blood pressure, total cholesterol, high-density lipoprotein cholesterol and body mass index^{5,6}. However, these factors explain only about half the deaths from CVD, leaving medical researchers to focus in recent years on identifying additional, non-traditional risk factors. One such factor may be periodontitis. Five to 10 percent of any population suffers from severe, generalized periodontitis, although mild to moderate periodontitis affects a majority of adults.

This report will focus on evidence published since the mid 2000s for the association between periodontal disease and CVD, and will seek to answer the following questions:

Does periodontal disease cause cardiovascular disease?

How does treating periodontal disease affect cardiovascular disease?

If you have cardiovascular disease, does it help to treat periodontal disease?

Does periodontal disease cause cardiovascular disease?

Many scientific reports offer evidence that there is a link between periodontal disease and CVD. In fact, people with periodontal disease are up to two times more likely to have CVD, according to recent reports and research reviews. The review showed evidence that people with periodontitis are more likely to get CVD than those without, regardless of their other risk factors such as diabetes status, smoking or high blood pressure. Consequently, people with periodontitis should be aware that they may be more likely to suffer from CVD, and people suffering with CVD should be checked for periodontitis and be treated if necessary.

How does treating periodontal disease affect cardiovascular disease?

Existing evidence does not prove that treating periodontitis will prevent CVD. However, periodontitis causes inflammation inside the mouth, and evidence shows that inflammation inside the body can help us ascertain how healthy the heart and blood vessels are, even in the early stages of CVD. Blood can be tested for C-reactive protein levels, which are a sign of inflammation. C-reactive protein levels are high in both patients with periodontitis and in patients with cardiovascular disease. Treating periodontal disease lowers C-reactive protein levels, although there is no solid proof yet that this prevents cardiovascular events.

If you have cardiovascular disease, does it help to treat periodontal disease?

Existing research has not yet been able to answer this question. However, some research does show that periodontitis causes CVD, and that treating periodontal disease improves cardiovascular health. Therefore, treating periodontitis may improve the health of people already suffering from CVD.

Key Takeaways

- Overall, reports contribute to strengthening the concept that periodontal disease may play a role in severe and often fatal cardiovascular events. Periodontitis is increasingly regarded as a risk factor for CVD.
- Eventually, good periodontal health may become accepted as an important goal that could contribute to reducing the risk for cardiovascular events.

- Most common forms of periodontal disease are conditions relatively easy to diagnose and treat. Based on evidence, the expected outcome of periodontal treatment is improved periodontal health with negligible side effects.

Delta Dental recognizes that the emerging science underscores the importance of managing periodontal diseases in order to possibly decrease the risk of patients experiencing cardiovascular events. In order to provide access to appropriate levels of care, employers may want to consider covering additional periodontal maintenance for patients with cardiovascular conditions. Some Delta Dental companies have already begun to offer additional benefits for these patients.

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