European Society of Cardiology

15,000-patient study links periodontitis to heart disease risk

Periodontal disorders such as tooth loss and gingivitis have been identified as potential risk markers for cardiovascular disease in a study released in April. More than 15,000 patients with chronic coronary heart disease provided information on their dental health, with results showing that indicators of periodontal disease were common in this patient group and associated with cardiovascular risk factors.

Conversely, a lower prevalence of tooth loss was associated with lower levels of CVD risk factors, including lower glucose levels, low-density lipoprotein cholesterol levels, systolic blood pressure and waist circumference. Diabetes and smoking were also less prevalent among patients with more teeth, while likelihood of higher education, alcohol use and work stress was greater.

The report, published in the European Journal of Preventive Cardiology, summarized information on self-reported dental health from a clinical trial involving 15,828 participants from 39 countries all with chronic coronary heart disease and at least one additional risk factor for CHD. All participants had a physical examination and blood testing, and they completed a lifestyle questionnaire that included information on dental health. Participants reported their remaining number of teeth (none, 1–14, 15–20, 21–25, or 26–32/all) and frequency of gum bleeding (never/rarely, sometimes, often or always).

Results showed a high overall prevalence of tooth loss: 16 percent reported having no teeth, 41 percent reported having fewer than 15 remaining teeth, and 26 percent reported gum bleeding when brushing. However, there was some variation in results depending on region, country and ethnic group, with the highest rates of tooth loss and gum bleeding found in Eastern Europe. Almost 70 percent of participants were current or former smokers.

Statistical analysis showed that increasing prevalence of tooth loss was significantly associated with higher fasting glucose levels, LDL cholesterol levels, systolic blood pressure and waist circumference on a greater prevalence of tooth loss and gum bleeding found in Eastern Europe.

The spring 2014 CDA Presents, at the Anaheim Convention Center (above), is expecting more than 28,000 attendees, May 15–17. The California Dental Association meeting provides opportunities to learn about dentistry’s latest clinical and business advancements. A 150,000-square-foot exhibit hall with 600 companies is used every year to launch new products on the West Coast. (Photograph courtesy of Anaheim Convention Center).

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CDA Presents, May 15–17, Anaheim

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Meetings

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• California Dental Association Presents ‘The Art and Science of Dentistry’ in Anaheim

• Journées Dentaires Internationales du Québec in Montreal expects more than 225 companies to be represented in its exhibit hall.

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blood pressure and waist circumference. A higher prevalence of gum bleeding was significantly associated with higher LDL cholesterol levels and systolic blood pressure. According to the authors, the study is the largest of its kind to assess dental disease in coronary patients, and it demonstrates a heavier burden of CVD risk factors and as such lend support to a possible association between the conditions. But he was not ready to advocate rigorous dental hygiene measures as a strategy to reduce cardiovascular risk.

Age and smoking are well known risk factors common to both periodontal and cardiovascular disease — and with established biological explanations. “Our findings also support the notion that periodontal disease is an independent risk factor for coronary heart disease.” However, he added, the observation that poor dental health among chronic coronary patients is linked to a heavier cardiovascular risk burden does not prove causation between the two conditions. Vedin said, “It is still a matter of debate whether periodontal disease is an independent risk factor for coronary heart disease. Some studies point to a moderate association while others are contradictory. Our findings show an association between self-reported periodontal disease and several cardiovascular risk factors and as such lend support to a possible association between the conditions.”

The findings suggest common risk factors for dental disease and coronary heart disease, and raise the question of whether self-described dental health can now be considered a useful marker of CVD risk.

The observed regional variations in the prevalence of periodontal disease “might partly be explained by regional differences in CV risk factor prevalence, for instance smoking.” However, the authors concede that such differences in prevalence “indicate a complex relationship in which demographic, genetic and socioeconomic disparities are likely contributing factors.” Smoking and less education also were associated with periodontal disease. Lead author Dr. Ola Vedin from the University of Uppsala, Sweden, said, “The evident and consistent relationship between self-reported dental status and CV risk in this population could point toward periodontal disease being a risk factor for incident CHD.” However, he added, the observation that poor dental health among chronic coronary patients is linked to a heavier cardiovascular risk burden does not prove a causal link between the two conditions.

He and his colleagues were “astonished” by the prevalence of severe tooth loss seen in the study but “puzzled” by the marked differences in prevalence between countries within the same geographical region. (Source: European Society of Cardiology)