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

European Society of Cardiology latest to show possible association

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 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).

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The findings suggest common risk fac-
tors 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 “in-
dicate a complex relationship in which
demographic, genetic and socioeconomic
disparities are likely contributing factors.”
Smoking and less education also were associ-
ated with periodontal disease.

Lead author Dr. Ola Vedin from the Uni-
versity of Uppsala, Sweden, said, “The evi-
dent and consistent relationship between
self-reported dental status and CV risk in
this population could point toward peri-
odontal disease being a risk factor for inci-
dent CHD.” However, he added, the observa-
tion 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.

Vedin said, “It is still a matter of debate
whether periodontal disease is an indepen-
dent risk factor for coronary heart disease.
Some studies point to a moderate asso-
ciation 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.” But he was not ready to ad-
vocate rigorous dental hygiene measures as
a strategy to reduce cardiovascular risk.

Age and smoking are well known risk fac-
tors common to both periodontal and car-
diovascular disease — and with established
biological explanations. “Our findings also
support the notion that periodontal dis-
ease and socioeconomic status are closely
related,” added Vedin.

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 coun-
tries within the same geographical region.

(Source: European Society
of Cardiology)