

Periodontitis linked to increased risk of premature death

Periodontitis is a severe gum disease that can lead to destruction of bone surrounding the teeth and eventually tooth loss. But this disease is also associated with an increased risk of premature death among adults, according to a study conducted by researchers from the Karolinska Institutet, Sweden, and Dr Li-jian Jin of The HKU Faculty of Dentistry.

Recently published online in the *Journal of Periodontal Research* ahead of print publication, the study tracked a large cohort of adults in Sweden and found that those who died prematurely were more likely than survivors to have previously received a diagnosis of periodontitis. Furthermore, after related factors such as smoking were taken into consideration, calculations showed that the odds of premature death were more than tripled for individuals with periodontitis who had any missing molars (back teeth).

Other, retrospective studies have suggested a link between periodontal disease and mortality, but the research described in the published paper, which supports this link, had a 16-year longitudinal prospective design, the authors note.

“Currently, oral infection and systemic health is a very hot issue for dental and medical professionals, as well as for the public through the media,” says Dr Jin, Associate Professor of Periodontology at The HKU Faculty of Dentistry. “Our paper for the first time provides prospective evidence for the association between periodontitis and premature death.”

The researchers began their investigation in 1985, when they randomly chose a group of 1676 adults aged 30 to 40 years who were registered residents of Stockholm County, Sweden. At the start of the study, the participants underwent an oral clinical examination and completed a questionnaire that asked for information such as educational level, income, smoking habits, and dental visits.



Dr Li-jian Jin (top photo, far right) with study coauthors Prof B Klinge (far left) and Prof P-Ö Söder (middle), and with Prof B Söder (bottom photo, left).



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According to the baseline data, about 17% of the participants showed signs of periodontitis and the average number of missing teeth was 1.24 per person.

By 2001, a total of 40 (2.39%) of the participants had died, most frequently because of cancer and disorders of the circulatory and digestive system. Death due to these three types of disease was more common among people with periodontitis who had one or more missing molars than among people without periodontitis (1.05%-2.11% vs 0.28%-0.65%).



A patient with severe periodontitis

Furthermore, individuals who had died had poorer initial oral health than survivors, including significantly more missing teeth (2.33 vs 1.23 per person), more missing molars (1.33 vs 0.51 per person), and a higher prevalence of periodontitis (58% vs 32%).

A statistical analysis that accounted for age, sex, education, income, smoking, dental visits, dental plaque, gum inflammation, and missing teeth, revealed that individuals with periodontitis who had any missing molars had significantly increased odds of premature death (odds ratio, 3.62; 95% confidence interval, 1.28-10.16).

The researchers conclude that “periodontitis in young adults with any missing molars is a risk marker for premature death”. Noting that periodontitis with missing molars indicates chronic inflammation and infection, or “an underlying weakness of the host defence system”, the authors point to a connection between the long-term presence of abundant tooth and gum bacteria and life-threatening systemic diseases.

The authors highlight the public health implications of their findings, adding that preventive measures “are well warranted”, especially given the expected societal costs of untreated periodontitis. “Periodontitis is actually quite widespread and, if left unchecked, has serious consequences,” says Dr Jin. “Our findings suggest that the early prevention and control of gum disease will have important benefits for both oral and systemic health.”

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