

New Evidence Finds an Association Between Periodontal Disease and Stroke

Researchers from Boston University investigate the relationship between periodontal disease and ischemic stroke

CHICAGO – October 10, 2006 – People missing some or all of their teeth or who have significant loss of bone and tissue surrounding their teeth may be at an increased risk for having a stroke, according to a new study that appeared in the October issue of the *Journal of Periodontology* (JOP

Abstract

Journal of Periodontology

2006, Vol. 77, No. 10, Pages 1744-1754
(doi:10.1902/jop.2006.050339)

The Association Between Cumulative Periodontal Disease and Stroke History in Older Adults

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Background: Since the late 1980s, several studies have been conducted to investigate the relationship between periodontal disease and ischemic stroke. The purpose of this study is to investigate the relationship of periodontal disease to the self-reported history of stroke in the elderly (60 years of age and older) by examining the data of the Third National Health and Nutrition Examination Survey (NHANES III).

Methods: Data from NHANES III, a large population-based cross-sectional survey of the United States, were used for this study. Because 1,563 of the 5,123 subjects in the study were edentulous, and periodontal disease is a major cause of tooth loss, it was necessary to account for edentulousness in the statistical analysis to avoid bias.

Hence, a new index called the periodontal health status (PHS) index was developed to address this problem. Two measures of PHS were developed: PHS I, based on the median percentage of sites with ≥ 2 mm clinical attachment loss (CAL), and PHS II, based on the median percentage of sites with ≥ 3 mm CAL. Multiple logistic regression analysis was used to test for the association of PHS with stroke history. Two types of a multiple logistic regression model were fit: 1) logistic regression modeling with adjustment for age and tobacco use only; and 2) logistic regression modeling with adjustment of all statistically significant confounders.

Results: Based on multiple logistic regression analysis of PHS with adjustment for age and tobacco use only, completely edentulous elderly adults (PHS Class 5) and partially edentulous (teeth in one arch) elderly adults with appreciable clinical attachment loss (PHS Class 4) were significantly more likely to have a history of stroke compared to dentate adults (teeth in both arches) without appreciable clinical attachment loss (PHS Class 1). When multiple logistic regression models were fit with adjustment of all significant confounders, no statistically significant association was found between PHS and stroke.

Conclusions: Based on the results of this study, there is evidence of an association between cumulative periodontal disease, based on PHS, and a history of stroke. However, it is unclear whether cumulative periodontal disease is an independent risk factor for stroke or a risk marker for the disease.