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## Abstract

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## Periodontal disease, tooth loss and coronary heart disease assessed by coronary angiography: a cross-sectional observational study.

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#### Abstract

**OBJECTIVE AND BACKGROUND:** To evaluate the association between periodontal disease, tooth loss and coronary heart disease (CHD). There is still controversy about the relationship between periodontal disease and tooth loss with vessel obstruction assessed using coronary angiography.

**MATERIAL AND METHODS:** This cross-sectional study included 195 patients that underwent coronary angiography and presented with at least six teeth. Patients were classified into three categories of coronary obstruction severity: absence; one or more vessels with  $\leq 50\%$  obstruction; and one or more vessels with  $\geq 50\%$  obstruction. The extent of coronary obstruction was dichotomized into 0 and  $\geq 1$  affected vessels. A periodontist blinded to patient CHD status conducted a full mouth examination to determine mean clinical attachment loss, mean periodontal probing depth and tooth loss. Multiple logistic regression models were applied adjusting for age, gender, hypertension, smoking, body mass index, low-density lipoprotein cholesterol and C-reactive protein.

**RESULTS:** Most patients were males (62.1%) older than 60 years (50.8%), and 61% of them had CHD. Mean periodontal probing depth, clinical attachment loss and tooth loss were  $2.64 \pm 0.72$  mm,  $4.40 \pm 1.31$  mm and  $12.50 \pm 6.98$  teeth respectively. In the multivariable models, tooth loss was significantly associated with a higher chance of having at least one obstructed vessel (odds ratio = 1.04; 95% confidence interval 1.01-1.09) and with vessel obstruction  $\geq 50\%$  (odds ratio = 1.06; 95% confidence interval 1.01-1.11). No significant associations were found between periodontal variables and vessel obstruction.

**CONCLUSION:** Tooth loss was found to be a risk indicator for CHD.

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**KEYWORDS:** coronary angiography; coronary disease; periodontal disease; tooth loss

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