Alcohol consumption a risk factor for periodontal disease

Abstracted from

Amaral Cda S, Vettore MV, Leão A.

The relationship of alcohol dependence and alcohol consumption with periodontitis: a systematic review. *J Dent.* 2009; **37**: 643-651.

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Questions: Is alcohol consumption or dependence associated with periodontitis?

Data sources Medline, LILACS, SciELO and Cochrane Central Register of Controlled Trials (CENTRAL).

Study selection The papers were screened independently by two reviewers: disagreements were resolved by a third reviewer. Randomised-controlled trials (RCTs), controlled clinical trials (CCTs), cohort studies, case-control and cross-sectional studies in English were included. Quality was assessed using STROBE methodology (www.strobe-statement.org).

Data extraction and synthesis Quality was assessed using STROBE methodology (www.strobe-statement.org). Owing to heterogeneity among studies concerning the methods of assessment of alcohol dependence, alcohol consumption and periodontitis no meta-analysis was performed.

Results Eleven cross-sectional and five longitudinal observational studies met the inclusion criteria. Seven of the 12 studies on alcohol consumption and all of the four studies on alcohol dependence reported positive associations between alcohol intake and periodontitis. Although smoking was properly addressed in all selected studies, the confounding effect of dental plaque was taken into account in only six studies.

Conclusions There is evidence to suggest alcohol consumption is a risk indicator for periodontitis. Longitudinal studies on the association of alcohol dependence and alcohol consumption with periodontitis are needed to confirm the association or not.

Commentary

Periodontitis is invariably described as having a systemic host-mediated component. Several studies have sought to identify and further understand relationships between periodontitis and potential systemic risk factors including consideration of possibilities such as genetic disorders, osteoporosis and alcohol. Increased alcohol consumption is known to have a broad range of detrimental systemic effects with the attendant potential of modifying the host-mediated response and affecting risk.

This work by Cristine da Silva Furtado Amaral and colleagues seeks to further clarify, through systematic review, any association between alcohol and periodontal disease, making the additional distinction between alcohol consumption and that of alcohol dependence. The search strategy incorporated Cochrane Collaboration Group systematic review methodology. Of the resultant 34 potentially relevant studies, 16 were included, 12 related to alcohol consumption and four

to alcohol dependence. Notably only English language studies were included at the expense of seven potentially relevant articles.

Study quality was evaluated using STROBE methodology against various parameters, with stratification into three levels. Only one study met all of the quality assessment criteria reaching level 1, with three studies classified as level 2. The authors accept quality weaknesses in some studies including that of diagnostic criteria for periodontitis, bias, potential confounders including proxy measures for plaque control and differences in the assessment of alcohol consumption or dependence. For example Tezal *et al*¹ used National Health and Nutrition Examination Survey data that recorded alcohol consumption over the previous 12 months through structured interview (www.cdc.gov/nchs/nhanes/nhanes_questionnaires.htm). Retrospective self-report alcohol consumption patterns gather error through inaccurate historical recollection. Various quantitative measures were adopted across studies including consumption frequency, drink sizes, unit measures, and use of alcohol questionnaires or blood investigations.

The diagnostic criteria for periodontal disease varied similarly with measures such as periodontal probing depth, CPTIN (community periodontal index of treatment needs), clinical attachment loss and with bias from uncertainty of clinical calibration.

In general the paper offers a well-conducted systematic review. However it was not reasonable to combine the results in meta-analysis secondary to heterogeneity of selected studies.

Despite the methodological diversities the authors' report that most of the cross-sectional studies suggested a positive association between alcohol and periodontal disease, concluding there is sound evidence to suggest alcohol is a risk indicator for periodontitis. They qualify their conclusion by advocating further research.

It may be prudent to continue to promote research into the delivery of alcohol related health advice in primary care.² This will inform interventions and implementation strategies to enhance delivery of alcohol related health advice by dentists when, not if, it becomes a more prominent oral health risk factor.

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2. Shepherd S Young L, Clarkson J, Bonetti D, Ogden GR. General dental practitioner views on providing alcohol related health advice; an exploratory study. *Br Dent J* 2010; **208**: 304-305.

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