PERIODONTAL DISEASE

Alcohol-periodontitis link

BACKGROUND

Alcohol abuse has been associated with many medical, social, and work-related problems. However, light intake of alcohol has also been shown to positively affect antioxidant capacity, lipid profile, coagulation cascade, and the rates of cardiovascular disease. Studies investigating a possible association between alcohol consumption and the development of periodontitis have also shown varying results. A review of data from the National Health and Nutrition Examination Survey (NHANES) 2009-2010 and 2011-2012 was undertaken to determine if there is an association between alcohol consumption and periodontitis.

METHODS

A total of 7062 adults age 30 years or older were included. Alcohol consumption relied on self-reported average number of alcoholic drinks per week over the preceding 12 months. Four groups were formed based on alcoholic consumption, yielding those with 0 intake, <1 drink, 1 to <8 drinks, and ≥8 drinks per week. Periodontitis status was determined by clinical attachment level (CAL) and periodontal probing depth (PD) measurements. Analysis of the alcohol consumption–chronic periodontitis association was undertaken using multivariable regression analyses that were adjusted for age, gender, race/ethnicity, education level, ratio between income and poverty, smoking status, self-rated overall oral health, and HbA_{1c} level.

RESULTS

Three thousand eight hundred eighty-four participants, reflecting 45.9% of the US population, had mild, moderate, or severe periodontitis. Characteristics more common among cases were older age, male gender, Hispanic or black racial/ethnic status, low educational level, current smoking, obesity, elevated HbA_{1c} level, poor oral health, and consumption of 8 or more drinks per week. All of the confounding variables were associated with alcohol consumption.

The participants who consumed less than 1 alcoholic drink per week on average had the lowest mean PD, extent of PD of 4 mm or greater, mean CAL, and extent of CAL of 3 mm or greater. This group served as the reference group for subsequent logistic regression analyses.

Periodontitis was associated with alcohol consumption. An association was also seen between total periodontitis and age, sex, race/ethnicity, educational level, income-to-poverty ratio, cigarette smoking, self-rated overall oral health, body mass index (BMI), and HbA_{1c} level. When the analysis was adjusted for age, poverty, smoking, and other covariates, no significant association was found between alcohol consumption and total periodontitis. However, consuming 8 or more alcohol drinks per week was significantly associated with severe periodontitis, and periodontitis was associated with age, sex, race/ethnicity, educational level, income-to-poverty ratio, cigarette smoking, self-rated overall oral health, and HbA_{1c} level.

Further analysis revealed that C-reactive protein did not significantly contribute to the multivariate logistic regression analysis. However, participants who consumed 1 to both fewer than 8 alcoholic drinks and 8 or more drinks per week had significantly higher levels of mean PD, extent of PD ≥5 mm, mean CAL, and extend of CAL ≥3 mm compared to those who drank less than 1 drink a week. The difference in mean PD, extent of PD ≥4 mm, mean CAL, and extent of CAL ≥3 mm was not significant when nondrinkers and participants who drank an average of less than 1 drink per week were compared.

DISCUSSION

The regular consumption of alcoholic drinks was associated with a higher likelihood of having periodontitis, especially severe periodontitis. No significant increased odds of having periodontitis existed between participants who drank no alcoholic drinks and those who drank an average of less than 1 drink per week.

Clinical Significance

Drinking an average of 8 or more alcoholic beverages per week was associated with a significant increase in the likelihood that an individual would have severe periodontitis. The odds nearly doubled with the high alcoholic beverage intake compared to abstinence. However, drinking 1 or fewer drinks per week resulted in a risk for periodontitis that was similar to that of individuals who drank no alcoholic beverages. Identifying the mechanism that links alcohol and periodontitis requires further study.

Gay IC, Tran DT, Paquette DW: Alcohol intake and periodontitis in adults aged ≥30 years: NHANES 2009-2012, *J Periodontol* 89:625-634, 2018

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