severe periodontitis were noted for occasional and frequent marijuana use. Only frequent marijuana had increased odds of periodontitis compared to nonusers once adjustments were made for sex, age, health care coverage, current smoking, binge drinking, oral sex partners, oral HPV infection, and dental visits.

DISCUSSION

Although marijuana use was found to be associated with severe periodontitis, it was not related to oral HPV infection. A strong association was found between frequent marijuana use and severe periodontitis that persisted even after adjustments were made for various confounding factors.

Ortiz AP, González D, Ramos J, et al: Association of marijuana use with oral HPV infection and periodontitis among Hispanic adults: Implications for oral cancer prevention. *J Periodontol* 89:540-548, 2018

Clinical Significance

It seems apparent that frequent use of marijuana is associated with a higher risk for developing severe periodontitis. However, the mechanism by which this detrimental effect occurs remains largely unknown. Further study is needed to identify this mechanism and to evaluate possible strategies for preventing periodontitis in marijuana users. Further studies of oral cancer risks associated with marijuana would also be helpful, since widespread legalization and increased use of marijuana appear to be in our future.

Reprints available from AP Ortiz, Univ of Puerto Rico, Comprehensive Cancer Ctr & Dept of Biostatistics and Epidemiology, Graduate School of Public Health, PO Box 365067, San Juan, PR 00936-5067; e-mail: ana.ortiz7@upr.edu

PERIODONTICS

Antibiotics in nonsurgical periodontal treatment of diabetic patients

BACKGROUND

Patients with diabetes mellitus (DM) have a greater prevalence and severity of periodontal disease than patients without DM. In addition, periodontal infection may be associated with poorer glycemic control in diabetics and periodontal treatment can improve glycemic control, indicating a bidirectional relationship between DM and periodontitis. Some clinical studies have therefore indicated that antibiotics may offer an adjunctive effect in the nonsurgical periodontal treatment of patients with DM. Of the recent systemic reviews addressing the effect of systemic antimicrobials in diabetic patients with periodontitis, both used doxycycline at subantimicrobial doses. Because of this and the fact that different antimicrobials can have different efficacies against periodontal infections, the current evidence may underestimate the effectiveness of antimicrobials in this role. A systematic review was done to assess the adjunctive effects of systemic antibiotics in nonsurgical periodontal treatment and to compare these effects with those obtained using nonsurgical periodontal treatment alone in patients with diabetes. In addition, various antibiotics were used to evaluate which may improve periodontal therapy's effects.

METHODS

Fifteen studies of 11 randomized controlled clinical trials with a follow-up of at least 3 months were identified after a search of the MEDLINE, EMBASE, and LILACS databases up to August 2016. These trials covered 541 patients with chronic periodontitis and diabetes, of whom 496 completed follow-up. Meta-analyses were performed to determine any changes in clinical attachment level (CAL), probing pocket depth (PPD), bleeding on probing (BOP), and gingival index (GI).

RESULTS

The risk of bias analysis indicated 3 trials had a low risk of bias, 7 a high risk, and 1 an unclear risk. Eleven studies evaluated the use of systemic antibiotics as an adjunct to scaling and root planning (SRP). Three of these showed a significant reduction in PPD/gain in CAL associated with the use of the systemic antibiotics when compared to a placebo group. The antibiotics evaluated were doxycycline, azithromycin, amoxicillin + metronidazole, and amoxicillin + clavulanic acid.

Meta-analyses showed significant differences between the groups for overall PPD reduction. The effects of systemic antibiotics on PPD reduction only appeared in subjects with type 2 diabetes. CAL gain levels did not differ between the groups. In addition, studies shown to have a low risk of bias had a significant PPD reduction that favored the test group. Risk of bias status did not affect CAL gain.

When antibiotic type was considered, the meta-analyses indicated that PPD reduction was significant only with doxycycline and the combination of amoxicillin + metronidazole. No antimicrobials were associated with CAL gain.

The adverse effects that were reported included gastrointestinal discomfort with the final placebo tablet in 1 study as well as diarrhea in 3 control subjects and 7 test subjects, headache in 1 control subject and 4 test subjects, metallic taste in 2 control subjects and 4 test subjects, and nausea/vomiting in 2 control subjects and 5 test subjects in another study. Another trial reported 1 woman had dizziness and difficulty swallowing, 1 trial reported no adverse effects, and 7 studies did not mention any adverse effects or complications.

DISCUSSION

PPD reduction was a modest additional benefit of SRP plus antimicrobial(s) in some studies. CAL gain was not affected by the use of antimicrobials. In the studies showing significant CAL gain and PPD reduction, the adjunctive systemic antimicrobials used were doxycycline 100 mg and the combination of metronidazole 400 mg + amoxicillin 500 mg.

Clinical Significance

A small but significant reduction in PPD and no effect on CAL were shown to be associated with the use of antibiotics along with SRP. The combination of amoxicillin and metronidazole had the best results in PPD reduction. Further study should include follow-up times of at least 12 months, well-defined inclusion criteria for diabetes status, and the exclusion of smokers or the randomization stratified by smoking status.

Souto MLS, Rovai ES, Ganhito JA, et al: *Int Dent J* 68:207-220, 2018

Reprints available from CM Pannuti, Div of Periodontics, Univ of São Paulo, Avenida Prof. Lineu Prestes, 2227, São Paulo 05508-000, SP, Brazil; e-mail: pannuti@usp.br

Severe periodontitis, Hispanic/Latino heritage, and diet

BACKGROUND

Chronic periodontitis is an inflammatory disorder with various manifestations that is triggered by the presence of bacterial entities and causes destruction of the dentition-supporting tissues. Although the cause is likely to be multifactorial, our current understanding of the possible contributing factors remains incomplete. According to the most recent National Health and Nutrition Examination Survey (NHANES, 2009-2012), Hispanic individuals are more likely than non-Hispanic White individuals to have periodontitis, with moderate to severe periodontitis prevalence at 64% for Hispanics/Latinos over age 30 years. Most of the individuals represented in NHANES 2009-2012 were of Mexican heritage. The Hispanic Community Health Study/Study of Latinos (HCHS/SOL) found that significant heterogeneity exists in the prevalence of moderate to severe periodontitis in Hispanics/Latinos based on their heritage backgrounds. For example, Dominicans have a 25% prevalence, whereas Cubans have a 52% prevalence. A contributory role has been proposed for dietary factors in the manifestation and/or progression of periodontitis. Generally the literature has focused on specific macronutrients or micronutrients and has not considered the synergistic effects of dietary patterns. The alternative health eating index (AHEI) was created in 2002 and updated in 2010 (AHEI-2010) as a measure of the quality of a diet based on foods and nutrients found to be predictive of chronic disease risk. It has found usefulness in predicting risks for chronic obstructive pulmonary disease, cardiovascular disease, and type 2 diabetes, but has not yet been used to predict oral disease. The baseline data of the HCHS/SOL were used to evaluate the association of diet quality with severe periodontitis.

METHODS

A total of 13,920 Hispanic/Latinos age 18 to 74 years were included in this community-based prospective cohort study. All had full-mouth periodontal examinations, noting several clinical measures of periodontitis: levels of clinical attachment loss (CAL), periodontal probing depths (PD), and bleeding on probing (BOP). All were measured at 6 sites per tooth on all fully erupted permanent teeth except third molars. Dietary information was collected via 2 24-hour dietary recalls, with 1 taken at baseline and the second taken via telephone 5 days to 3 months after baseline. The data included 139 nutrients, nutrient ratios, food-group serving counts, and other food components. The 11 component foods and nutrients from at least 1 of the dietary recalls included 6 for which higher consumption is recommended