

BACKGROUND

As marijuana use is increasingly being accepted and legalized worldwide, it's important to understand its beneficial therapeutic and detrimental effects on human health. Marijuana smoke delivers harmful substances similar to those in cigarette smoke, which can impair the immune response and compromise healing ability. Marijuana contains over 60 active ingredients (cannabinoids), of which the psychoactive component, 1-delta-9-tetrahydrocannabinol (THC), exerts a depressant effect that may increase the body's susceptibility to infection. In addition, cannabinoids appear to attenuate the production of certain inflammatory mediators. One link that has been suggested is the possibility that marijuana may be a risk factor for oral human papillomavirus (HPV) infection, periodontitis, and oral cancer. Oral HPV infection has been associated with oropharyngeal squamous cell carcinomas. In addition, periodontitis has been linked to oral cavity, oropharynx, and larynx squamous cell carcinomas. A review of data from a sample of Hispanic adults was done to identify any associations between marijuana use and periodontitis or oral HPV infection.

METHODS

This cross-sectional study focused on individuals who participated in the San Juan Overweight Adults Longitudinal Study (SOALS), which recruited overweight/obese adults age 40 to 65 years in Puerto Rico from 2011 to 2013. The 735 adults underwent full-mouth clinical examinations using a modified version of the National Health and Nutrition Examination Survey (NHANES) procedures. Periodontitis was evaluated using measurements of probing depth (PD) and clinical attachment loss (CAL) from 6 sites on all teeth except the third molars. In addition, oral rinse specimens were self-collected by participants to evaluate the presence of oral HPV infection. Marijuana use was obtained through an audio computer-assisted self-interview. Use was defined as nonuse, which was never using or once in lifetime; frequent use, which consisted of consuming marijuana 26 or more times during the lifetime, 6 or more times in the past year, and 2 or more times in the past 30 days; or occasional use, which encompassed the remainder of the participants. Variables that were also considered included demographic, clinical, and behavioral characteristics. Demographics included sex, age, education, income, and health insurance. The clinical covariates included obesity, impaired glucose metabolism, dental visits in the past 3 years, and periodontal treatment in the past 3 years. The behavioral characteristics included current smoking status, binge drinking, and lifetime number of oral sex partners.

RESULTS

Women accounted for 72.4% of the participants, and 18.4% of participants were current smokers. About 27% of the participants reported some use of marijuana, with 10% reporting frequent consumption and less than 10% reporting use at least twice in the past 12 months or past 30 days. Oral HPV infection was found in 5.7% of the frequent marijuana users, moderate periodontitis was present in 39.5%, and severe periodontitis was identified in 20.1%.

Oral HPV Infection and Marijuana Use

Age was not associated with a higher incidence of oral HPV infection, but men had a higher prevalence than women (10.3% versus 3.9%). Persons with no health care coverage had a higher prevalence of oral HPV infection than those with private or public health insurance (12.7%, 4.1%, and 6.6%, respectively). The presence of severe periodontitis was associated with a higher prevalence of oral HPV than either moderate or none/mild periodontitis (11.5%, 4.1%, and 4.4%, respectively). Nonusers of marijuana had a prevalence of oral HPV infection of 4.1%, occasional users had a prevalence of 10.2%, and frequent users had a prevalence of 10.0%. When lifestyle characteristics were considered, persons with at least 6 lifetime oral sex partners had a higher prevalence of oral HPV infection (12.3%) than their counterparts (4.0%).

Periodontitis and Marijuana Use

A higher prevalence of moderate periodontitis was found among men who used marijuana (45.6%) than among women (37.1%). In addition, men who used marijuana had a higher prevalence of severe periodontitis than women (30.4% versus 16.2%, respectively). Other characteristics of marijuana users associated with a higher prevalence of periodontitis included older age group, lower education, lower annual income, and no or public health insurance. Persons with oral HPV infection had a 40.5% prevalence of severe periodontitis, which was much higher than those without this infection (18.9%). Positive associations with periodontitis were found for current smokers, binge drinking, and having 6 or more lifetime oral sex partners. The prevalence of severe periodontitis was 17.0% in nonusers of marijuana, 25.7% in occasional users, and 55.0% in frequent users.

Multivariable Analysis

No significant association was found between marijuana use and oral HPV infection when multivariable analysis was done with adjustments for sex, age, health care coverage, oral sex partners, and periodontitis. However, significantly increased odds of having

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.

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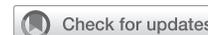
Clinical Significance

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.

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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.