Marijuana Use May Protect Against Diabetes

BY BRUCE JANCIN

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DENVER – Marijuana use may be associated with a markedly decreased risk of diabetes.

A provocative new analysis of data from the Third National Health and Nutrition Examination Survey (NHANES III) indicates marijuana users had 66% lower odds of having diabetes after adjustment for numerous potential confounding factors, Dr. Magda Shaheen reported at the meeting.

This robust observed benefit has a biologically plausible mechanism, she noted.

In addition to defects in pancreatic beta- cell function and insulin sensitivity, the pathogenesis of diabetes is thought to involve systemic inflammation. Marijuana contains bioactive cannabinoids that have been shown to have an anti-inflammatory effect. This was borne out in the NHANES III analysis, where the prevalence of an elevated C-reactive protein level in excess of 0.5 mg/dL was significantly higher in nonusers of marijuana, at 18.9%, than in past users, with a 13% prevalence of elevated CRP, current light users (16%), or current heavy users of the illicit drug (9%), according to Dr. Shaheen of Charles R. Drew University of Medicine and Science, Los Angeles.

The study population consisted of 10,896 NHANES III participants aged 20-59 years; they constituted a statistically representative sample of the broader U.S. civilian population in 1988-1994, when the survey was conducted.

The majority of subjects – 55% – reported never having used marijuana. Another 37% were past users, meaning they hadn't used marijuana during the previous month. The 6% of subjects who reported currently using the drug 1-4 days per month were categorized as current light users, while 3.3% of subjects were current heavier users.

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Major Finding: The age-adjusted prevalence of diabetes was 4% in nonusers and significantly lower at 3% in marijuana users. In a multiple logistic regression analysis adjusted for sociodemographic factors, comorbid conditions, laboratory values, and inflammatory markers, marijuana users had a 66% lower likelihood of having diabetes.

Data Source: A cross-sectional study involving 10,896 NHANES III participants aged 20-59 years.

Disclosures: The study was funded by Omics Biotechnology, which is pursuing potential medical applications for nonpsychotropic cannabinoid receptor agonists. Dr. Shaheen declared she has no relevant financial relationships.

The age-adjusted prevalence of diabetes in this cross-sectional study was 4% in nonusers and significantly lower at 3% in marijuana users.

Current and past users of marijuana were significantly younger, had a lower body mass index, and were more physically active than were nonusers. They were also more likely to smoke cigarettes, drink alcohol, and use cocaine. In addition, they were more likely to have an HDL level greater than 40 mg/dL and had lower mean total cholesterol, LDL, and triglyceride levels.

In a multiple logistic regression analysis adjusted for sociodemographic factors, comorbid conditions, laboratory values, and inflammatory markers, marijuana users had a 66% lower likelihood of having diabetes. This benefit was confined to the 41- to 59-year-old age group, where the reduction in diabetes risk associated with marijuana use was 67%. In contrast, the 7% reduction in risk among 20- to 40-year-olds was not statistically significant. These findings could be the result of the markedly higher occurrence of diabetes in middle age.

Unlike in diabetes, marijuana use was not associated with a lower prevalence of the other chronic diseases that Dr. Shaheen and coworkers looked at in which systemic inflammation also plays a role: myocardial infarction, heart failure, stroke, and hypertension. "This was probably due to the lower prevalence of these diseases in this age group," she commented. ■