Dental treatment planning considerations for patients using cannabis

A case report

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ABSTRACT

Background and Overview. There is a deficit in clinical research on the potential risks involved in treating dental patients who use cannabis for either medicinal or recreational purposes. The aim of this case report is to illustrate the need for additional education for oral health care professionals so they can understand the wide variety of available cannabis options and their potential effects on dental treatment.

Case Description. A 27-year-old man sought care at the dental clinic with a nonrestorable molar requiring extraction. During the review of his medical history, the patient reported taking a "dab" of marijuana approximately 5 hours before his appointment. Because of the admission of recent illicit drug use, no treatment was rendered. The patient was offered an appointment the next day but he refused, citing bias in regard to his cannabis use.

Conclusions and Practical Implications. The number of Americans using marijuana is increasing rapidly. Twenty-three states and the District of Columbia have laws legalizing cannabis to some degree, and Alaska, Colorado, Oregon, and Washington have legalized marijuana for recreational use. This drastic upswing in availability and usage will require dentists to address the possible effects of cannabis on dental practices. It is imperative that dental care providers make clinical decisions based on scientific evidence regarding the pharmacologic and psychological effects of marijuana, not on the societal stigma associated with illegal drug use. Dentists should be familiar with popular delivery systems and understand the differences between various marijuana options. Clinical guidelines may need to be developed to help providers assess the patient's degree of cognitive impairment. Dentists should be able to advise patients on the potential consequences of this habit on their oral health.

Key Words. Cannabis; marijuana; drug addiction.
JADA 2016:■(■):■-■
http://dx.doi.org/10.1016/j.adaj.2015.11.019

Cannabis consumption is at an all-time high in the United States. According to the 2013 National Survey on Drug Use and Health, marijuana is the most commonly used illicit drug, with 19.8 million past-month users.[1] Legalization in several states, and pending legislation in many others, has amplified the need for medical care providers to understand how the drug affects not only a patient's physical health but also his or her psychological well-being. Policy changes alter the cultural landscape. Particularly among young adults, more lenient cannabis regulations are associated with diminishing perceived risk.[2] Subsequently, lowered risk perception is a key predictor of increased drug use.[3]

Although decriminalization may increase societal acceptance, it is important not to equate legalization with regulation. Initial legislation in most states has involved the use of marijuana for medicinal or therapeutic reasons. Although the potential for medicinal use is compelling, the most rapid increase in marijuana consumption has occurred in the recreational market. The potency and purity of available marijuana is variable. Increased free market values encourage higher potency formulations. Almost daily, new strains are being modified genetically, and more efficient delivery systems are being developed. The pharmacokinetics is unique, depending on the method of absorption and metabolism, as well as the specific potency of the cannabis product. Unlike with prescription medications, dentists cannot simply access a reference guide to determine the pharmacologic implications of a specific dosage. Neither the consumer nor the medical care provider has verification of the drug's potency. Unlike with the tobacco industry, there are no federal regulatory processes in place to

protect the consumers of marijuana, primarily because its use and sale, although legal in many states, is still illegal under federal law.[4]

Intraoral conditions such as fiery red gingivitis, gingival hyperplasia,[5] uvulitis,[6] tongue carcinoma,[7] and xerostomia[8] are well documented in the literature. In 1992, Darling and Arendorf[9] showed a higher decayed, missing, and filled teeth score; a greater plaque index; and poorer gingival health in cannabis users than in nonusers. These conditions, although substantial, indicate a history of drug use. Much less is known about the effects of cannabis on dental treatment while the drug is pharmacologically active in the body. Within minutes of inhalation, a user may experience elevated heart rate, bloodshot eyes, and slowed respiration rate. Cannabis use can result in elevated blood pressure[10] while the user is sitting or supine but may result in orthostatic hypotension and subsequent dizziness or fainting[11] on standing. Cardiac function may be affected for several hours after cannabis use.[11] Decreases in left ventricular ejection time and preinjection periods coincide with an increase in sinus rate. Peripheral vascular resistance decreases as does exercise-induced cardiac performance. However, not all blood vessels dilate. Small vessels in the fingers and toes constrict, resulting in temperature changes in the extremities. Patients using cannabis may report cold sensations in fingers and toes after even small doses of tetrahydrocannabinol (THC).

Marijuana use may provoke a wide array of potentially difficult behaviors in patients, ranging from slight cognitive impairment to acute psychosis.[12] Dental care providers must become knowledgeable about how cannabis use affects their ability to provide treatment. This knowledge requires an understanding of both the physiological effects on oral health and the psychological effects on cognition.

Given the breadth of cannabis use, there is a lack of clinical research available to educate oral health care providers. This deficit creates a barrier to providing effective medical advice to the patient. What happens when a patient reports using marijuana before a dental appointment? Are dental care providers able to assume a patient can provide informed consent to irreversible procedures while under the influence of cannabis, and, if so, how do we assess the degree of impairment? Many dental care providers are still uncomfortable discussing marijuana use with their patients, especially in states where the drug remains illegal. Although most Americans support legalization,[13] dentists may have moral or religious beliefs affecting their perception of patients using cannabis recreationally. Providers also may differentiate between patients using marijuana for medicinal purposes, such as reduction of nausea during chemotherapy, and patients using cannabis purely for pleasure. In these instances, the medical risk of dental treatment may be higher in the former because of other medical conditions. It is important for the dentist to separate moral judgment from the ethical need to provide adequate dental care to the patient. It is not appropriate to consider cannabis use alone a contraindication to dental care.

Anecdotally, dental patients have been using marijuana for anxiety relief without disclosure for a long time. Most dentists will not ask a patient whether he or she has consumed alcohol before an appointment unless the patient seems impaired. It is likely casual cannabis users have been treated routinely in dental offices throughout the country for many years. The disclosure of marijuana use during the medical history should be seen as an opportunity for honest discussion of potential oral health consequences, not a potential roadblock to treatment.

The objective of this article is to help dentists navigate the complex landscape of cannabis use in the patient population. Dentists should familiarize themselves with the signs and symptoms of acute marijuana intoxication and develop an understanding of the potential effects of cannabis use on the patient's overall health. Legally, it is impossible to obtain informed consent from a patient whose cognitive function is impaired significantly as a result of a psychoactive drug. Considering the increase in cannabis availability and evolving variations, greater awareness and understanding are necessary for health care providers to make informed clinical assessments. Health care providers must be able to determine marijuana's role in the patient's ability to provide consent and any increased medical risk during dental procedures. It is imperative that decisions are based on scientific data, not social bias or stereotype.

BACKGROUND

The origins of the cannabis plant are believed to be in Asia. Records from thousands of years ago in China describe its use as an important textile plant, food crop, medicinal ingredient, and hallucinogenic drug.[14] The medicinal benefits of cannabis and evidence of intentional cultivation of the plant have been found in Indian Ayurvedic medicine since 900 BC.[15] Marijuana is composed of the dried leaves and flowers of the plant *Cannabis sativa*. *C sativa* contains 66 known cannabinoids,[16] chemicals unique to the cannabis plant. The endocannabinoid system, in particular the CB1 receptor where cannabis acts, helps maintain neurochemical stability in the brain. The endocannabinoid system also affects several biological functions such as appetite, anxiety, and memory through a range of actions in the nervous system.[17]

The most researched of these cannabinoids are THC and cannabidiol. THC is the main psychoactive chemical

ABBREVIATION KEY. THC: Tetrahydrocannabinol.