

IN BRIEF

- Marijuana (cannabis) is the most commonly abused illicit psychoactive drug.
- In one recent study, about 50% of dental students in the UK had used illicit drugs, including marijuana.
- Medical uses of marijuana include symptomatic relief of chronic pain, multiple sclerosis and depression, arthritis and neuropathy.
- An oromucosal spray has been developed from the major components of cannabis designed to relieve pain especially in multiple sclerosis.
- Oral stinging and white lesions may result from using the spray.

Adverse effects from a cannabis spray

Cannabis; adverse effects from an oromucosal spray **C. Scully**¹

ABSTRACT

Background

An oromucosal spray has been developed from the major components of marijuana (cannabis), including tetrahydrocannabinol (THC) and cannabidiol (CBD), in alcohol with a peppermint flavouring, designed to be administered as a spray under the tongue or on the buccal mucosa to relieve pain in multiple sclerosis. Although the available evidence indicates its efficacy in this respect, some patients develop oral burning sensation, stinging or white lesions, probably burns.

Objective

To investigate the oral side-effects of oromucosal cannabis spray in multiple sclerosis (MS) patients.

Design

A small open observational study.

Subjects and methods

A series of nine patients with MS who had been using a marijuana oromucosal spray for at least four weeks, were asked to attend for oral examination. Patients were asked whether they had ever experienced symptoms (dryness; bad taste; stinging) associated with use of the spray. A standard oral examination was carried out using a dental light, and the presence of any mucosal lesions recorded. Where mucosal lesions were present, patients were advised to discontinue the spray and re-attend after four weeks for re-examination. For ethical reasons, biopsies were not undertaken at the first visit.

Results

Of nine patients invited to participate, eight attended. All admitted to a stinging sensation on using the oromucosal cannabis spray, and four had visible oral mucosal white lesions in the floor of the mouth.

Conclusions

Although the white lesions observed were almost certainly burns, resolving or improving on discontinuation of use of the medication, the high alcohol concentration of the oromucosal cannabis spray raises concern in relation to chronic oral use.

EDITOR'S SUMMARY

It may well come as a surprise to some readers that cannabis, or at least its major components, is available legally. Given the continuing controversy over substance abuse and the safety, morality and legality of drug use it is valuable to note that cannabis does have legitimate medical uses.

One of these is in the relief of chronic pain for sufferers of multiple sclerosis and is delivered in the form of an oromucosal spray. However, as with many medications the side effects also have to be considered and the oral sensations of burning and stinging together with the appearance of white patches causes some patients discomfort with the consequent loss of value to them of the therapy.

Ironically, the problem is not with the component of cannabis *per se* but the vehicle in which it is supplied in the spray, ethanol. The choice of this alcohol is due to the low solubility of the cannabis components in water rendering the agent less effective in delivery in this form.

The study is a small one but involves sufferers of a condition that many practitioners will see and treat at some time, making awareness of possible use of the medication and its side effects important. However, the work is also a classically simple example of the research process in its most straightforward guise. As the author succinctly reports in answer to the standard questions in these research summaries, the reason for the enquiry was because the lesions were noticed, due to patient complaints, while the next step having established the cause is to study a larger population. It is the type of process that can be followed in primary care; identify a problem, complaint or anomaly, question how often it occurs and in whom and attempt to find a common cause or connection.

The full paper can be accessed from the *BDJ* website (www.bdj.co.uk), under 'Research' in the table of contents for Volume 203 issue 6.

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Editor-in-Chief

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Oral white lesion in user of alcohol-based cannabis spray

FULL PAPER DETAILS

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AUTHOR QUESTIONS AND ANSWERS

1. Why did you undertake this research?

Because the lesions were noticed.

2. What would you like to do next in this area to follow on from this work?

Study a larger group.

COMMENT

Debilitating pain occurs in 50–70% of multiple sclerosis (MS) patients. Randomised double-blinded placebo-controlled trials have demonstrated that cannabis-based treatments are effective in treating neurological pain in MS.¹ Therefore it is not surprising that 43% of MS patients in the UK reported use of cannabis at some stage, most of them to alleviate symptoms such as pain and spasms.² However, current use for symptom control was small (12%), which may be related to systemic side effects and problems with the administration.

The results of this study illustrate the oral side effects of a recently developed oromucosal spray containing delta-9-tetrahydrocannabinol (THC) and cannabidiol, major active components of cannabis. Four out of eight chronic users developed oral lesions resembling a sublingual keratosis or a burn. Although this percentage may be an overestimation, due to the open observational design of the study and the limited number of subjects, it indicates that use of the spray may have severe oral side effects that limit chronic use.

The burns are almost certainly due to irritation of the administration site by the approximately 50% v/v ethanol in the mouth spray. The high level of ethanol in the mouth spray is necessary because THC has a very low solubility in water.³ Smoking does not seem an attractive alternative method to administer cannabis. It increases the risk of bronchitis and may predispose to oral cancer.⁴

Recent studies indicate that complexation with cyclodextrins increases the aqueous solubility of THC significantly, a promising observation for the development of water-based THC formulations. Until these new formulations become available, regular oral inspection is mandatory in chronic users of cannabis-based mouth sprays.

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