



MEDICAL MARIHUANA (MARIJUANA) – A REVIEW OF THE BASICS

THE LAW HAS CHANGED

Prior to April 1, 2014, thousands of Canadian patients possessed an “Authorization to Possess” (ATP) status for medical marihuana use through Health Canada’s “Marihuana Medical Access Regulations” (MMAR).¹ Subsequent to that date, the MMAR legislation was repealed and new legislation came into effect known as the “Marihuana for Medical Purposes Regulations” (MMPR).¹ These new regulations require that all marihuana in Canada be grown by licensed commercial providers. Dried marihuana is the only form that is approved for distribution. Thus, it is now illegal for anyone to grow marihuana on his/her personal property, regardless of medical need.¹

Medical marihuana must be prescribed by a physician (or a nurse practitioner in provinces and territories where prescribing dried marihuana is permitted under scope of practice—not Ontario at this time).¹ The patient who requires medical marihuana must obtain a medical document signed by a physician and present the document to a licensed producer in order to register as a client.² The dried marihuana as ordered by the physician is couriered to the patient by the licensed producer. With physicians now the source of medical marihuana procurement, more patients in long-term care facilities may be using this mode of therapy, especially for pain issues.

THE MEDICINAL EFFECTS OF MARIHUANA

Marihuana (also known as cannabis) has been used for medicinal purposes since 2737 BC.³ Marihuana contains cannabinoids, which interact with specific cannabinoid receptors found in the brain and spinal nerves.⁴ The particular cannabinoid responsible for the most psychoactive and physical effects is tetrahydrocannabinol (THC).⁴ Marihuana appears to alter the way in which painful stimuli are perceived, thereby reducing the intensity of pain interpreted by the brain.² Studies have suggested benefit of marihuana in treatment of pain associated with cancer, multiple sclerosis, and generalized nerve pain as well as nausea and vomiting associated with chemotherapy. Studies examining the use of marihuana for treatment of other types of pain have been mostly

inconclusive.⁴ Many other indications for marihuana use have been investigated, but studies supporting other uses are sparse. The most frequent side effects of cannabinoids are dizziness or lightheadedness (30%-60%), dry mouth (10%-25%), fatigue (5%-40%), muscle weakness (10%-25%), myalgia (25%), and palpitations (20%).⁵ Cough and throat irritation may occur with smoked cannabis.

Cannabis is contained in two commercially available pharmaceutical products. Cannabidiol (Sativex®) is a buccal spray containing THC extracts that is indicated as adjunctive treatment for symptoms of spasticity or neuropathic pain in adult patients with multiple sclerosis.⁶ It is also indicated for adjunctive treatment of pain in adult patients with advanced cancer suffering from moderate to severe pain despite using the highest tolerated dose of opioid therapy. Nabilone (Cesamet®) is a synthetic analog of THC that is available in an oral preparation and indicated for the management of severe nausea and vomiting associated with chemotherapy.⁷

DOSING AND ROUTES OF ADMINISTRATION

Ingestion of cannabinoids from medical dried marihuana is most often achieved through smoking. Smoking marihuana is as hazardous as smoking tobacco, so alternative systems of administration have been researched. The most common alternative to smoking is vaporizing cannabis leaves by heating the plant product to below the temperature of combustion.⁴ This permits inhalation of volatilized gases without the hazardous chemicals that are produced by burning. There are many vaporizers available. Some examples can be found online at <http://greenleafmc.ca/store>.

There are many variables associated with cannabis that make dosing calculations complex. Variations in cannabinoid content of various sources of marihuana and genetic differences in individuals with respect to cannabinoid receptor structure and function and metabolism are just a few of the factors creating dosing issues.⁸ Rough dosing guidelines for smoked or vaporized cannabis have been published by Health Canada. In making recommendations about dosing, Health Canada highlights the following:

“Dosing remains highly individualized and relies to a great extent on titration. Patients with no prior experience with cannabis and initiating cannabis therapy for the first time are cautioned to begin at a very low dose and to stop therapy if unacceptable or undesirable side effects occur.” MPT

Sativex® (delta-9-tetrahydrocannabinol-cannabidiol)

Sativex® is a buccal spray that:

- is useful as adjunctive treatment for symptomatic relief of spasticity in residents with multiple sclerosis who have not responded adequately to other therapy and who demonstrate meaningful improvement during an initial trial of therapy
- may be useful as adjunctive treatment for the symptomatic relief of neuropathic pain in adult residents with multiple sclerosis
- may be useful as adjunctive analgesic treatment in residents with advanced cancer who experience moderate to severe pain during the highest tolerated dose of strong opioid therapy for persistent background pain

The active components (tetrahydrocannabinol and cannabidiol) are both scheduled under the Controlled Drugs and Substances Act and are psychotropic agents that may produce physical and psychological dependence.

Contraindications

Sativex® is contraindicated in:

- residents with known or suspected allergy to cannabinoids, propylene glycol, ethanol, or peppermint oil
- residents with serious cardiovascular disease, such as ischemic heart disease, arrhythmias, poorly controlled hypertension, or severe heart failure
- residents with a history of schizophrenia or any other psychotic disorder

Drug administration should be discontinued in residents experiencing a psychotic reaction or a suicidal ideation, and the resident should be closely observed in an appropriate setting until his/her mental state returns to normal. Residents should stop taking Sativex if they become confused or disoriented.

Dose & Administration

Sativex® spray should be directed to below the tongue or towards the inside of the cheeks. The site should be varied. The individual administering the spray should be advised not to direct the spray toward the pharynx and to ensure that the spray is not inhaled. It must not be sprayed into the nose. The spray should be primed as per product monograph.

Adverse Reactions

A number of adverse reactions have been associated with use of Sativex® including (not a comprehensive list) fatigue, nausea,

vomiting, vertigo, dizziness, somnolence, disorientation, anorexia, oral discomfort, and constipation. Cannabinoids have cardiovascular effects that include tachycardia and transient changes in blood pressure, including episodes of postural hypotension.

This review is not comprehensive. Please refer to Sativex® product monograph for more comprehensive information.

Cesamet® (Nabilone)

Cesamet® is a synthetic cannabinoid that is used for the management of some patients with nausea and vomiting associated with cancer chemotherapy. This drug also has sedative and psychotropic effects. Cesamet® should be used with caution in the elderly.

Cesamet® is contraindicated in individuals with a history of psychotic reactions. It should be used with extreme caution in patients with severe liver dysfunction and in those with a history of non-psychotic emotional disorders. Cesamet® should not be taken with alcohol, sedatives, hypnotics, or other psychotomimetic substances.

The most frequently observed adverse reactions to Cesamet® are drowsiness, vertigo, psychological high, dry mouth, depression, ataxia, blurred vision, sensation disturbance, anorexia, asthenia, headache, orthostatic hypotension, euphoria, and hallucinations.

The usual dose of Cesamet® is 1 mg or 2 mg twice a day. The first dose should be given the night before initiating administration of chemotherapy. The second dose is usually administered 1 to 3 hours before chemotherapy. **DN**

This review is not comprehensive. Please refer to Cesamet® product monograph for more comprehensive information.

References:

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3. Borgelt LM, Franson KL, Nussbaum AM, Wang GS. The pharmacologic and clinical effects of medical cannabis. *Pharmacotherapy* 2013; 33:195-209.
4. Greenwell GT. Medical marijuana use for chronic pain: Risks and benefits. *J Pain Palliat Care Pharmacother* 2012;26:68-69.
5. Grant I, Hampton Atkinson J, Gouaux B, Wilsey B. Medical marijuana: Clearing away the smoke. *The Open Neurology Journal* 2012;6:18-25.
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8. Health Canada. Information for Health Care Professionals: Cannabis (marihuana, marijuana) and the cannabinoids. Available online at <http://www.hc-sc.gc.ca/dhp-mps/marihuana/med/infoprof-eng.php>. Accessed September 9, 2014.