

Medical Marijuana

Deb Evans, RN, MScN, CON(C), CHPCN(C)

Clinical Nurse Specialist

Pain and Symptom Management Team

Juravinski Cancer Centre

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Objectives

1. Review controversy
2. Pathophysiology
3. Indications for Use
4. Adverse Effects
5. How Patients Access



Medical Marijuana: Controversy

- “Gateway” drug
 - Concerns over the nonmedical use of marijuana spill over onto the medical marijuana debate
- Limited clinical studies to demonstrated the safety and efficacy
- Lack of understanding about how to dose



Components of Cannabis

- Cannabis Sativa hemp plant
- >70 Cannabinoids in the plant
- Delta-9-Tetrahydrocannabinol
 - Psychoactive effects
- Cannabidiol
 - Does not have psychoactive effects
- Several different strains which vary in the amounts of different cannabinoids



Pathophysiology

Cannabinoid Receptors

- CB₁, CB₂
- found throughout the body in most tissues and organs
- especially numerous in the brain and nervous system

Endogenous cannabinoids

- Anandamide and 2-arachidonyl-glycerol



Synthetic Cannabinoids

- Dronabinol and nabilone
- Delta-9-THC
- Lack the balancing chemicals of the plant that boost beneficial effects and temper some of the adverse effects
- Some find too strong/weak
 - Lower peak effect
 - Long half life

Pathophysiology

Involved in the regulation of many bodily functions:

- brain and nervous system activity,
- heart rate and blood pressure,
- digestion,
- inflammation,
- immune system activity,
- perception of pain,
- reproduction,
- wake/sleep cycle,
- regulation of stress and emotional state



Indications for Use

- Pain
 - Neuropathic
 - Muscle Spasms
 - Headache and Migraine
- Appetite stimulation
- Nausea and vomiting
- Psychoactive effects
 - mood,
 - Sleep
 - PTSD
- Reduce intraocular Pressure
- Irritable bowel



Indications for Use

- Effect of cannabinoids on symptoms are generally modest
- More effective drugs for most symptoms
 - subpopulation of people who do not respond well to these medications
 - “failed” standard treatment for the symptom
- Medical marijuana may be able to treat multiple symptoms reducing the need for multiple medications



Addiction, Tolerance, Withdrawal

- Tolerance develops
- Potential for dependence
 - Less than with benzodiazepines, opiates, cocaine or nicotine
- Withdrawal
 - Mild and short lived
 - Restlessness, irritability, mild agitation, insomnia, sleep disturbance, nausea and cramping



Adverse Effects

- No deaths have been reported from overdose
 - Smoking 800 “joints” (est.) are required to kill
 - Death is from carbon monoxide poisoning, not cannabinoid poisoning
- Adverse effects are within the range tolerated for other medications



Adverse Effects

- Diminished psychomotor performance
- Dizziness, drowsiness, feeling faint or lightheaded, fatigue, headache
- Impaired memory and disturbances in attention, concentration and ability to think and make decisions
- Disorientation, confusion, feeling drunk



Adverse Effects

- Feeling abnormal or having abnormal thoughts, feeling "too high", feelings of unreality, feeling an extreme slowing of time
- Suspiciousness, nervousness, episodes of anxiety resembling a panic attack, paranoia, hallucinations



Adverse Effects

- Dry mouth, throat irritation, coughing;
- Cannabis hyper emesis syndrome
 - Severe intractable episodes of cyclic nausea and vomiting accompanied by epigastric and periumbilical pain
- Fast heartbeat



Adverse Effects

- Carcinogenic
 - No reliable data proving/disproving
 - Biggest part of the risk felt to be related to “smoking” cannabis
 - Delivers the same harmful substances as tobacco smoke
 - Vaporizing may reduce this risk
 - Some patients believe it helps fight their cancer because of the effect on immune system

Pharmacology

- Inhaled:
 - Onset: 5 min
 - Duration 2-4 hours
- Ingested
 - Onset: 30-60 minutes
 - Duration: 8-12 hours
 - Wait 30-60 minutes between bites
 - Significant first-pass metabolism when ingested



Dosing

- Patient determined self-dosing model
- Highly individualized
- Marijuana plant contains a variable mixture of biologically active compound
- Average joint contains 0.5-1 gm marijuana
- Average daily dose is 1-3 gms/day
- >5gms per day increased risk of adverse effects



Marihuana for Medical Purposes Regulations

- Health Canada
 - No longer will produce or sell marijuana
 - License commercial providers
 - Patients no longer apply to Health Canada for authorization
 - No longer allow personal production by patients or designated growers



Legal Challenges to Current Legislation

- Concern ability of users to grow their own marijuana
- Granted a stay of the new legislation allowing those who had licenses to grow under the previous legislation to continue to grow until the court case is heard
- No new licenses to grow will be issued



How Do Patients Access

1. Consult Physician
 - Any physician can prescribe
2. Complete Medical Document
 - Amount authorized to use
 - Time authorized for (can't exceed 1 year)
 - Doctor's credentials
 - Does not have to include information about what condition the medical marijuana is used to treat



How Do Patients Access

3. Register with a Licensed Producer
 - 13 registered producers
 - List is available on the Health Canada site
 - Patient sends Medical document to producer
 - Verify the Document with the physician
 - Send the patient “Proof of Legal Possession of Marihuana for Medical Purposes” card/form



How Do Patients Access

4. Marijuana will be shipped to patient
 - Maximum allowed to possess is grams/day X 30 days or 150 grams whichever is less
 - Sent in a plastic bottle with a label indicating patient information and that the product is from licensed provider
 - Allowance for marijuana to be shipped to the physician and then dispensed to the patient
 - Medical Regulatory bodies advising physicians not to do this



References

- Marijuana and Medicine: Assessing the Science Base, 1999
- Information for Health Care Professionals: Cannabis and the Cannabinoids, 2014
- Medical Marijuana Update, OMA, 2014