

**Testimony of
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on

Senate Bill 1015

“An Act Concerning the Palliative Use of Marijuana”

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TESTIMONY for BILL 1015—

An Act Concerning the Palliative Use of Marijuana

Oral preparations of cannabis can be found throughout history for a multitude of therapeutic uses. In many other countries, pure cannabinoids have been approved to relieve nausea and vomiting, stimulate appetite, and help treat chronic pain. However, the smoking of marijuana as a form of receiving this medication remains a subject of debate.¹

A study at McGill University Health Centre found that a single inhalation of 25 mg of 9.4% tetrahydrocannabinol herbal cannabis, three times daily, for five days, reduced the intensity of pain, improved sleep and mood, and was well tolerated in patients with neuropathic pain.² In another study conducted in the inpatient General Clinical Research Center at UCSF, smoking cannabis cigarettes three times a day reduced HIV associated sensory neuropathy pain by 34%. This reduction in pain was significantly more than the 17% reduction with placebo cigarettes, over a 5-day period. During this study, smoked cannabis was well tolerated and was found to have effectively relieved chronic neuropathic pain.⁴ Oral THC was compared with smoked cannabis in over 1000 patients to treat chemotherapy induced nausea and vomiting. The researchers conducting this meta-analysis found that patients who were a part of the smoked cannabis group had a 70-100% relief from their nausea and vomiting compared with only a 76-88% relief in those who had taken oral THC.⁵

The reason that inhaled cannabis has been shown to be more favorable than oral cannabinoids may be due to pharmacokinetics. Inhaled marijuana has a more predictable effect, which is both more rapid and potent.¹ Smoking cannabis causes a rapid rise in plasma levels of THC. A peak THC concentration is reached within 9 min of smoking a single cannabis cigarette and quickly decreases due to rapid distribution into the tissues.³ This rapid onset of action is desirable in patients with breakthrough pain or nausea who need immediate relief. It is also possible that THC and other ingredients in the cannabis smoke may also have a pharmacodynamic interaction that may lead to a superior therapeutic result, but this hasn't been studied enough to make any conclusions.¹

When cannabinoids enter the body, they begin to work on the Cannabinoid-1 Receptor (CB₁R). The principal actions at the receptor is causes a stabilizing effect of the neuron, depressing neuronal excitability and reducing the release of transmitters.³ By stabilizing the neuron in this fashion, there is a reduction of pain transmission to the brain.

Undesirable consequences of smoking cannabis were identifiable, however it was a consistent notion that these side effects were acceptable to patients with chronic pain. Overall, cannabis has been found to have minimal toxicity and a good safety profile.⁶ Side effects for inhaled or smoked cannabis can include intoxication, an increase of anxiety or psychotic episodes, orthostatic hypotension, as well as bronchial inflammation.¹ When delivered via inhalation cannabis does not have similar health hazards to nicotine-rich tobacco smoking, except for a potential increased risk for bronchial irritation or bronchitis.⁶

FDA indicated medications currently used to treat neuropathic pain have their pitfalls as well. Medications typically used to treat neuropathic pain can include anticonvulsants, antidepressants, opioids, and local anesthetics, which have both varied results and have adverse side effects that can limit medication adherence.² These side effects can range from constipation, paresthesias, sexual dysfunction, weight gain, appetite loss, arrhythmias, etc.

Larger more randomized controlled trials are suggested in the future. Many researchers are having a difficult time actually obtaining cannabis to be used as a study drug due to delays in licensing, approvals of the study drug, and too restrictive criteria for eligibility.

With a quick onset of action and high effect profile for the relief of pain, nausea, and vomiting, it is clear that there is a potential place for cannabis in palliative care.

We at The Connecticut Hospice, Inc. currently employ an oral derivative of Cannabis. We endorse the careful clinical use of all dosage forms of Cannabis to relieve nausea, vomiting, and anorexia at the end of life. We look forward to the approval of additional dosage forms of Cannabis to our Pharmacologic formulary. We would trial the product specifically for Pain and suffering related to serious medical conditions.

The Pharmacy department at our institution is a Preceptor site for students from the University of

Connecticut who are completing their clinical requirements for graduation. They have assisted in the compilation of the data presented today and will assist with a trial of an approved Marijuana product for the advancement of end of life comfort for our patients.

1. Kalant H. Smoked Marijuana as Medicine: Not Much Future. *Clinical Pharmacology and Therapeutics*. 2008. 83;4: 517-519.
2. Ware MA, Wang T, Shapiro S, et al. Smoked cannabis for chronic neuropathic pain: a randomized controlled trial. *Canadian Medical Association Journal*. 2010. 182;14: 694-701.
3. Hosking RD, Zajicek JP. Therapeutic potential of cannabis in pain medicine. *British Journal of Anaesthesia*. 2008. 101;1: 59-68.
4. Abrams DI, Jay CA, Shade SB, et al. Cannabis in painful HIV-associated sensory neuropathy: A randomized placebo-controlled trial. *Neurology*. 2007. 68;515: 515-521.
5. Musty RE, Rossi R. Effects of smoked cannabis and oral delta9-tetrahydrocannabinol on nausea and emesis after cancer chemotherapy: A review of state clinical trials. *Journal of Cannabis Therapeutics*. 2001. 1: 29-56.
6. Aggarwal SK, Carter GT, Sullivan MD. Medical use of cannabis in the United States: Historical perspectives, current trends, and future directions. *Journal of Opioid Management*. 2009. 5;3: 152-168.