

Are Cannabinoids Effective in Treating Non-Malignant Chronic Pain in Adult Patients

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Chi Upsilon Chapter

Problem

- Chronic pain is expected to continue to rise in prevalence. Cannabinoids have shown potential in managing this patient population. With the legalization of medicinal marijuana, an educational intervention is indicated to increase the knowledge base of cannabinoids to better drive care.
- This project aims to address two questions:
 - In adults with non-malignant chronic pain, is the use of cannabinoids safe and effective in decreasing pain?
 - In students enrolled in the AdventHealth University's masters level certified Nurse Anesthetist Program (NAP), does a 30-minute PowerPoint presentation on the safety and effectiveness of cannabinoids in treating chronic non-malignant pain increase their knowledge base?

Literature Review

- The endocannabinoid system (ECS) produces a negative feedback loop that can inhibit pain signaling.
- The marijuana plant contains Δ 9-tetrahydrocannabinol (Δ 9-THC), cannabiniol, and cannabidiol (CBD). These three ligands form the bulk of research and all prescribed cannabinoids contain at least one.
- Short-term**
 - Efficacy:** clinically effective for general neuropathies
 - Safety:** 59-100% experienced symptoms, but did not impact ADLs
- Long-term**
 - Efficacy:** only Sativex for allodynia showed clinical relevance
 - Safety:** similar to placebo, with rare serious side effects expected for the population

Analysis & Conclusions

- Mean scores improved from 26.19% to 55.24%
- A two-tailed paired-sample t-test showed statistical significance at <0.001

Test	Mean	N	Std. Deviation	Std. Error Mean
Pre-test	0.2619	21	0.12032	0.02626
Post-test	0.5524	21	0.21591	0.04712

Pre-test - Post-test	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% CI of Difference				
				Lower	Upper			
-0.29048	0.24881	0.05429	-0.40373	-0.17722	-5.350	20	<0.001	

Exogenous Ligand Medication	Brand Name	Route of Admin
Dronabinol (synthetic THC)	Marinol	Capsule
Indications: chemo-induced nausea & vomiting anorexia associated with AIDS		
Nabilone (racemic THC)	Cesamet	Capsule
Indications: chemo-induced nausea and vomiting		
Cannabidiol extract (CBD)	Epidiolex	Oral solution
Indications: 2 forms of epilepsy in children two and older		
THC/CBD combination	Sativex	Sublingual Spray
Indications: spasticity in multiple sclerosis		
Full-spectrum extract	Idrasil	Tablet
Indications: none; considered a dietary supplement		

Methods

- Quantitative pre-post test design
- Statistical data collected & analyzed with a paired t-test
- Significance threshold for the paired sample t-test was set using the traditional p <0.05

Findings

- Very limited evidence for the perioperative setting
- Cannabinoids appear to be safe without impacting daily function
- A 30-minute PowerPoint presentation was effective in improving knowledge

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References

- Available upon request on a separate paper.