CANNABINOID-BASED MEDICINES FOR CHRONIC PAIN: FACTORS THAT IMPACT TREATMENT EFFECTIVENESS

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INTRODUCTION

- Cannabinoid-based medicines (CBMs) most commonly used to treat chronic pain and related symptoms
- Limited high-quality evidence and well-designed randomized controlled trials (RCTs).
- Most clinical trials assessed inhaled delta-9-tetrahydrocannabinol (THC) to control neuropathic pain
- Research gaps on nociceptive and mixed pain, and effectiveness of other cannabis products (e.g. cannabidiol (CBD) products)
- Real-world evidence may provide valuable insights and has gained significant attention as a complement to medical cannabis RCTs.

STUDY OBJECTIVES

- Assess the overall effectiveness of CBMs (i.e., pharmaceutical cannabinoids and plant-derived products known as medical cannabis)
- Assess the impact of treatment and population-based factors (including treatment formulation, method of administration and pain mechanism)

METHODS

SAMPLE: Consenting adult patients with pain as a primary symptom

DESIGN: Prospective study. Initial visit (baseline) and 3-month follow-up (FUP) visit between July and November 2020

MEASURES:

- Patients demographics and diagnosis,
- Revised Edmonton Symptom Assessment System (ESAS-r),
- Brief Pain Inventory-short form (BPI-SF),
- Treatment plan characteristics

ANALYSES: Paired t-tests between baseline and FUP (p-value set at p = 0.05)

RESULTS

Number of patients	
Baseline	198
FUP1	96
Variable	
Age (mean, range)	57.4 (18-91)
Gender (N, %)	
Female	129 (65.1)
Male	69 (34.9)
Primary Diagnosis (N,%)	
Rheumatic disorders	36 (18.2)
Chronic pain syndromes	33 (16.7)
Fibromyalgia	31 (14.6)
Other spine disorders	29 (15.2)
Low-back pain	22 (11.1)
Post-traumatic pain	21 (10.6)
Neurological disorders	12 (6.1)
Oncological conditions	8 (4.0)
Gastrointestinal Disorders	3 (1.5)
Other diseases	1 (0.5)
Pain Etiology	
Non-cancer	185 (93)
Cancer-related	13 (7)
Pain Mechanism	
Nociceptive	77 (39)
Neuropathic	81 (41)
Mixed	27 (14)
N/A	13 (7)
Pain Variability	
Persistent	128 (64.6)
Fluctuating	62 (31.3)
Episodic	8 (4)

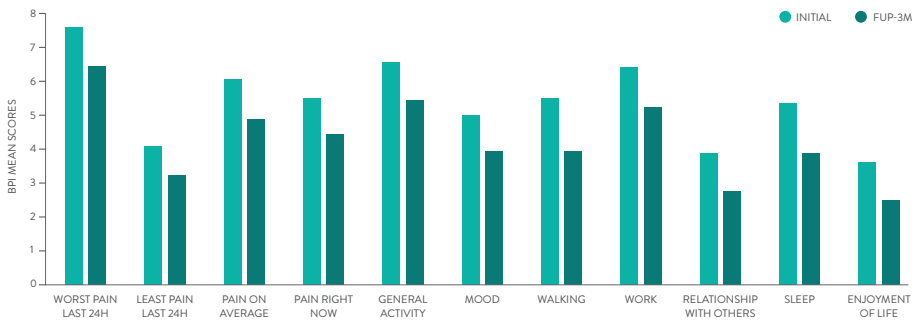

Figure 1. Brief Pain Inventory short form scores across visits

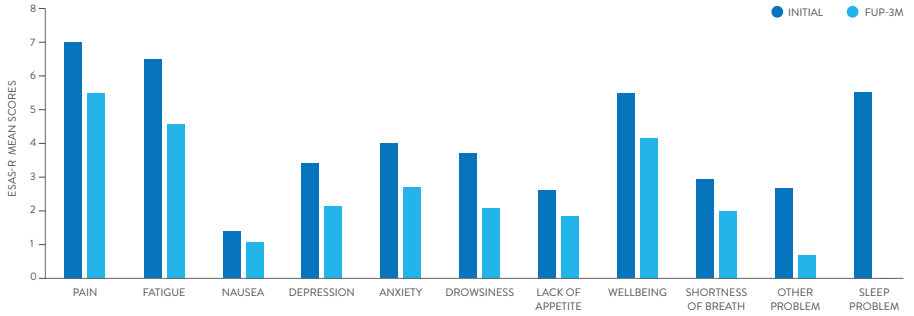

Figure 2. ESAS-r scores across visits

TREATMENT PLAN CHARACTERISTICS – INITIAL VISIT:

- Most patients (79%) received an authorization for medical cannabis (plant-derived extracts) ; 18% were prescribed a combination of pharmaceutical cannabinoids and medical cannabis, 3% pharmaceutical cannabinoids only.
- **Oral cannabis oil was most frequently prescribed** (78%) followed by oil and dried flower combination (17%).
- **CBD-rich products were predominantly prescribed** (55.6%) followed by THC:CBD balanced products (41.4%).
- Average daily dosage for oral CBD was 12.6mg (range 2-63mg) and for **oral THC, 2.3mg** (range 0.07-18mg).

EFFECTIVENESS

- **BPI-SF:** Statistically significant (ps <0.04) **improvement between Baseline and FUP for all variables**; Pain severity and pain interference scores decreased respectively from 5.83 to 4.75 and from 5.19 to 3.98. (Figure 1)
- **ESAS-r:** Statistically significant (ps <0.04) **improvement between Baseline and FUP for symptoms of pain**, fatigue, depression, anxiety, drowsiness, shortness of breath, lack of appetite, overall well-being but not for nausea. (Figure 2)

DISCUSSION/CONCLUSION

- Preliminary indication: CBMs may be considered as an adjunct to treat various pain conditions besides neuropathic pain
- In contrast with current literature, oral CBD-rich products were the preferred product and method of administration
- Accurate dosage of THC and CBD from clinical trials is often unclear; our study results may inform clinical guidelines and practice
- Further investigation needed to reproduce these results
- Data from this study has been expanded and will be presented in a upcoming paper.

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