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Summary:

Purpose/Hypothesis: The purpose of this systematic review was to determine effects of medical cannabis on quality of life (QOL) and movement in persons with Parkinson's Disease (PD).

Number of Subjects: N/A

Materials and Methods: A literature search of PubMed, ProQuest, Cochrane, and CINHL was conducted using the search terms: (medical marijuana OR cannabis OR cannabinoids OR delta-9-tetrahydrocannabinol OR THC or cannabidoil or CBD) AND (Parkinson's disease OR PD). Search limits: English, human subjects, peer reviewed. Selection criteria: adults diagnosed with PD, interventions included CBD and/or THC (any route of administration), and outcomes included movement and QOL. Two reviewers independently assessed each study for methodological quality and came to consensus based on CEBM Oxford Levels of Evidence (2009).

Results: 392 articles were assessed for eligibility. After detailed appraisals, eight studies met the selection criteria. Levels of evidence ranged from 2B-4. Sample sizes ranged from 6-339 (647 total) with ages from 36-92 and a primary diagnosis of PD (H&Y Stages I-IV). Interventions varied with durations ranging from 1 day to 10 weeks with administration routes Including CBD (75, 150 mg, 300 mg), Nabilone, Cannador capsules (max .25 mg/kg THC), and Smoked/Inhaled Cannabis (0.5-1g). There was a statistically significant improvement in PDQ-39 scores after use of CBD 300 mg (-25.6) compared to placebo (-6.5) (n=one, 2b). Significant improvements in UPDRS motor scores were found baseline to post-test (n=two, 2b) following use of 0.5-1g smoked cannabis (-7.7; -9.9) and a significant reduction in levodopa-induced dyskinesia was found (2b) after use of Nabilone. One study (2b) using CBD 150-300mg found a significant decrease in UPDRS total scores compared to baseline (-16.0). There was no significant difference in UPDRS or PDQ-39 scores following use of Cannador capsules (2b). Self-reported improvements were found in QOL and movement including resting tremor (30.6%), bradykinesia (44.7%), and muscle rigidity (37.7%), with adverse events including worsening of PD-related symptoms reported in 4.7% (n=1, Level 4).

Conclusions: There is low to moderate evidence in support of using medical cannabis to improve QOL and/or movement in patients with PD. Limitations included small sample sizes, short durations, and varied administration of cannabis. Further high-level research should be done to determine the optimal method and dosage in order to optimize benefits in patients with PD.

Clinical Relevance: Overall, medical cannabis treatment provides a relatively safe, feasible option to improve movement and QOL in patients with PD. Interventions of 300mg CBD, patient-specific CBD dosing (≥150mg), and 0.5g-1g cannabis resulted in meaningful improvements that exceeded the MCID values for the PDQ-39 (-4.72 pts.) or UPDRS (2.5 motor; 4.3 total pts.). The intervention of 300mg CBD, which is federally legal, had the most robust effect on motor and QOL outcomes. Clinicians should be prepared to respond with patient education and referrals as indicated for patients with PD who are considering or already using medical cannabis as a part of holistic clinical management.

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References:

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