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Medical Cannabis Treatment for Chronic Pain: Outcomes and Prediction of Response

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Abstract

Background: Although studied in a few randomized controlled trials (RCTs), the efficacy of medical cannabis (MC) for chronic pain remains controversial. Using an alternative approach, this multicenter, questionnaire-based prospective cohort was aimed to assess the long-term effects of MC on chronic pain of various etiologies and to identify predictors for MC treatment success.

Methods: Patients with chronic pain, licensed to use MC in Israel reported weekly average pain intensity (primary outcome) and related symptoms before and at 1, 3, 6, 9 and 12 months following MC treatment initiation. A general linear model was used to assess outcomes and identify predictors for treatment success (≥30% reduction of pain intensity).

Results: 1045 patients completed the baseline questionnaires and initiated MC treatment, and 551 completed the 12 month follow-up. At one year, average pain intensity declined from baseline by 20% [-1.97 points (95%CI= -2.13 to -1.81; p<0.001)]. All other parameters improved by 10-30% (p<0.001). A significant decrease of 42% [reduction of 27mg; (95%CI= -34.89 to -18.56, p<0.001)] from baseline in morphine equivalent daily dosage of opioids was also observed. Reported adverse effects were common but mostly non-serious. Presence of normal to long sleep duration, lower body mass index (BMI) and lower depression score predicted relatively higher treatment success, whereas presence of neuropathic pain predicted the opposite.

Conclusions: This prospective study provides further evidence for the effects of MC on chronic pain and related symptoms, demonstrating an overall mild to modest long-term improvement of the tested measures and identifying possible predictors for treatment success.

Significance: This "real world" paper shows that MC mildly to modestly attenuates chronic pain and related symptoms. MC treatment can also cause frequent, but mostly non-serious adverse effects, although central nervous system (CNS)-related AEs that can impair the ability to drive vehicles are not uncommon. This study is novel in identifying possible predictors for treatment success, including normal to long sleep duration, lower BMI and lower depression scores. In contrast to current beliefs the diagnosis of neuropathic pain predicts a less favorable outcome.

These findings provide physicians with new data to support decision making on recommendations for MC treatment.

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