Are cannabinoids an effective and safe treatment option in the management of pain? A qualitative systematic review.

Campbell FA, Tramer NR, Carroll D, Reynolds DJM, Moore RA, McQuay HJ. BMJ 2001;323:1-6

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Abstract:

Objective: To establish whether cannabis is an effective and safe treatment option in the management of pain.
Design: Systematic review of randomised controlled trials.
Data sources: Electronic databases Medline, Embase, Oxford Pain Database, and Cochrane Library; references from identified papers; hand searchers.
Study selection: Trials of cannabis given by any route of administration (experimental intervention) with any analgesic or placebo (control intervention) in patients with acute, chronic non-malignant, or cancer pain. Outcomes examined were pain intensity scores, pain relief scores, and adverse effects. Validity of trials was assessed independently with the Oxford source.
Data extraction: Independent data extraction; discrepancies resolved by consensus.
Data synthesis: 20 randomised controlled trials were identified, 11 of which were excluded. Of the 9 included trials (222 patients), 5 trials related to cancer pain, 2 to chronic non-malignant pain, and 2 to acute postoperative pain. No randomised controlled trials evaluated cannabis; all tested active substances were cannabinoids. Oral delta-9-tetrahydrocannabinol (THC) 5-20 mg, an oral synthetic nitrogen analogue of THC 1 mg, and intramuscular levonantradol 1.5-3 mg were about as effective as codeine 50-120 mg, and oral benzopyranoperidine 2-4 mg was less effective than codeine 60-120 mg and no better than placebo. Adverse effects, most often psychotropic, were common.
Conclusion: Cannabinoids are no more effective than codeine in controlling pain and have depressant effects on the central nervous system that limit their use. Their widespread introduction into clinical practice for pain management is therefore undesirable. In acute postoperative pain they should not be used. Before cannabinoids can be considered for treating spasticity and neuropathic pain, further valid randomised controlled studies are needed.

Comments:

Strengths/uniqueness: This is the first systematic review of randomized controlled trials of cannabinoids for pain management. A focused clinical question was addressed. Selection criteria were appropriate. The literature search was comprehensive. Validity of individual studies was appraised. Independent assessments were performed by the researchers.

Weaknesses: The heterogeneity of the individual studies precluded quantitative meta-analysis. Most trials evaluated cannabinoids administered as single doses only. No studies assessed smoked cannabis. An n-of-1 study demonstrating benefit for neuropathic pain and spasticity in a single patient with

multiple sclerosis appears to have been given undue emphasis in the discussion.

Relevance to Palliative Care: This review suggests that cannabinoids confer limited analgesic benefit with significant central nervous system adverse effects. The routine use of cannabinoids in palliative patients for treatment of pain is therefore not supported by the current literature. Research is underway to develop cannabinoids with greater therapeutic effects and less toxicity.