Evidence for THC versus CBD in cannabinoids

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Clinical question

Do tetrahydrocannabinol (THC), cannabidiol (CBD), or THC-CBD combined have differing benefits or harms?

Bottom line

Of 4 RCTs, 1 found THC-CBD superior to THC but this was inconsistent within the study and with other studies. Adverse events are prevalent with THC, CBD, and THC-CBD. While some early poor-quality research in healthy users suggests CBD attenuates some psychiatric effects of THC, better research in real patients is needed to verify any benefits of specific components.

Evidence

Four RCTs compared THC, CBD, or both combined.

- One RCT (N = 243 terminal cancer and weight loss patients) compared THC-CBD, THC, and placebo for 6 weeks.[1] There was no statistical difference in appetite or adverse events for THC-CBD versus THC.
- An RCT in 177 patients with refractory cancer pain taking strong opioids (about 270 mg of morphine) compared THC-CBD, THC, and placebo for 2 weeks.[2]
  -A pain reduction of 30% or more was seen in 38% of the THC-CBD group versus 21% in the THC group (number needed to treat = 6). There was no difference for pain reductions of 10% or more or 50% or more.
  -There was no difference in adverse events with THC-CBD versus THC.
- An RCT in 48 patients with brachial nerve injury compared THC-CBD, THC, and placebo over 2 weeks.[3]
  -Baseline pain score was 7.5 of 10. The THC-CBD and THC groups' pain reduced by about 1.3 points, statistically significantly more than 0.6 points with placebo.
  -Adverse events were not significantly different between THC-CBD and THC.
- N of 1 studies in 34 chronic pain patients (24 completed) who benefited from THC-CBD compared THC-CBD, THC, CBD, and placebo over 8 weeks.[4]
  -Versus starting THC-CBD, patients' pain management was the same or better in 38% with repeat THC-CBD, 33% with THC, and 17% with CBD (no statistical difference).

Context

- An RCT in 120 pediatric patients with Dravet syndrome showed CBD reduced seizure frequency by about 22% over placebo at 14 weeks.[5]
  -Adverse events included somnolence (number needed to harm [NNH] = 4), diarrhea (NNH = 5), and appetite loss (NNH = 5). A recent RCT of adults with Lennox-Gastaut (seizure) syndrome found similar results.[6]
- One guideline recommends low THC or a high CBD-to-THC ratio to reduce THC adverse events based on small studies of healthy volunteers (some with history of other drug use) examined with magnetic resonance imaging or short-term scale changes.[7]

Implementation

A Canadian guideline recommends cannabinoids (pharmaceutically derived first) only in refractory neuropathic pain, palliative cancer pain, nausea and vomiting from chemotherapy, and spasticity.[8] Current guidance for smoked dried cannabis for pain recommends titrating up to 400 mg/d of 9% THC.[9] Health Canada permits patients with a prescription for medical cannabis to legally possess up to 150 g, a 1-month's maximum supply, equating to 5 g/d.[10] A content analysis of Canadian licensed producers found that 58% of THC-predominant products had concentrations of 15% THC.[11] Thus, patients might be using much higher doses than studied or recommended.

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Competing interests
None declared

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