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Clinical Trial [J Hand Surg Am. 2022 Jul;47\(7\):611-620. doi: 10.1016/j.jhsa.2022.03.002.](#)

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A Randomized Controlled Trial of Topical Cannabidiol for the Treatment of Thumb Basal Joint Arthritis

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Abstract

Purpose: Since the passage of the Agricultural Improvement Act of 2018, hand surgeons have increasingly encountered patients seeking counseling on over-the-counter, topical cannabidiol (CBD) for the treatment of pain. To this end, we designed a human clinical trial to investigate the therapeutic potential of CBD for the treatment of pain associated with thumb basal joint arthritis.

Methods: Following Food and Drug Administration and institutional approval, a phase 1 skin test was completed with 10 healthy participants monitored for 1 week after twice-daily application of 1 mL of topical CBD (6.2 mg/mL) with shea butter. After no adverse events were identified, we proceeded with a phase 2, double-blinded, randomized controlled trial. Eighteen participants with symptomatic thumb basal joint arthritis were randomized to 2 weeks of twice-daily treatment with CBD (6.2 mg/mL CBD with shea butter) or shea butter alone, followed by a 1-week washout period and then crossover for 2 weeks with the other treatment. Safety data and physical examination measurements were obtained at baseline and after completion of each treatment arm.

Results: Cannabidiol treatment resulted in improvements from baseline among patient-reported outcome measures, including Visual Analog Scale pain; Disabilities of the Arm, Shoulder, and Hand; and Single Assessment Numeric Evaluation scores, compared to the control arm during the study period. There were similar physical parameters identified with range of motion, grip, and pinch strength.

Conclusions: In this single-center, randomized controlled trial, topical CBD treatment demonstrated significant improvements in thumb basal joint arthritis-related pain and disability without adverse events.

Type of study/level of evidence: Therapeutic II.

Keywords: Arthritis; CBD; cannabidiol; disability; pain; thumb basal joint.

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