

Cannabinoid-Opioid Interaction in Chronic Pain

Human study shows inhaled cannabis potentiates analgesia of opioids

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Reference

Abrams DI, Couey P, Shade SB, Kelly ME, Benowitz NL. Cannabinoid-opioid interaction in chronic pain. *Clin Pharmacol Ther.* 2011;90(6):844-851.

Design

This clinical trial was not randomized or blinded due to the challenges of introducing a placebo vaporized substance.

Participants

Human trial (N=24). Thirteen participants used morphine (10 by end of study), 11 participants used oxycodone; final analysis 11 men and 10 women, all Caucasian. Origin of pain: musculoskeletal, not otherwise specified (7); posttraumatic (4); arthritic (2); peripheral neuropathy (2); cancer, fibromyalgia, migraine, multiple sclerosis, sickle cell disease, and thoracic outlet syndrome (1 each). Mean morphine dose was 62 mg twice a day (range=10–200 mg) and the mean oxycodone dose was 53 mg twice a day (range=10–120 mg).

Study Parameters

Opioid (and opioid metabolites) pharmacokinetics (PK): Mean plasma concentration–time curves for morphine and oxycodone with and without cannabis treatment, for days 1 and 5, and plasma concentrations at steady state (1, 2, 4, 6, 8, 10, and 12 h after oral opioid administration). Tetrahydrocannabinols (THC) PK: plasma levels at baseline and 3, 10, 30, and 60 min. Objective effects (Rhodes Index of Nausea, Vomiting, and Retching Questionnaire) and subjective effects (self-reports utilizing the Drug Effects Questionnaire). Pain scores on days 1 and 5, Mean plasma THC levels; subjective effects AUC_{12} for opioids.

Primary Outcome Measures

The effects of vaporized cannabis administered 3 times a day on the steady-state pharmacokinetics of sustained-release morphine and oxycodone administered at 12-h intervals.