FAST FACTS AND CONCEPTS #93
CANNABINOIDS IN THE TREATMENT OF SYMPTOMS IN CANCER AND AIDS
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Introduction  The healing properties of cannabis have been asserted for centuries. Popular claims notwithstanding, there are no data to support the use of marijuana in the treatment of asthma, anxiety, depression, epilepsy, glaucoma, alcohol withdrawal, or infection; and limited data to support using cannabinoids as analgesics. Recent scientific studies of cannabinoids for symptom management have focused on nausea/vomiting and appetite stimulation.

Terminology  Cannabis sativa is the Indian hemp plant. Marijuana is a psychoactive substance derived from the plant. Cannabinoids are the biologically active compounds in the plant. THC is delta-9-tetrahydrocannabinol, the major cannabinoid. Dronabinol is synthetic THC and the main ingredient in the Schedule 3 drug Marinol. Nabilone is an engineered THC analog that forms the basis of the Schedule 2 drug Cesamet.

Pharmacology  Cannabinoids act on cannabinoid receptors: the CB1 receptor in the CNS and on the CB2 receptor localized primarily to immune cells. Dronabinol and nabilone are well absorbed orally, but first pass metabolism and protein binding limit bioavailability. Dronabinol has a faster onset of action (~30 minutes), while nabilone has a longer duration of action (typically 8 – 12 hours, but potentially as long as 24 hours in some patients). Alternative delivery systems – including inhalers, suppositories, and transdermal patches – are being evaluated.

Anti-emetic Use  Dronabinol and nabilone are FDA approved for the treatment of nausea and vomiting associated with cancer chemotherapy in patients who have failed to respond to conventional antiemetics. Cannabinoids in this context have two limitations. First, studies show that these agents, while efficacious in – and preferred by – many patients, have potent side effects and a variably narrow therapeutic window. Second, newer types of antiemetic therapy, including the 5-HT3 receptor antagonists and a neurokinin-1 receptor antagonist, have since been developed that appear to be both extremely effective and generally well tolerated. There are no published studies comparing dronabinol and nabilone to these newer generation agents, or to each other.

Orexigenic Use (Appetite Stimulation)  Dronabinol is FDA approved for the treatment of anorexia associated with weight loss in patients with HIV/AIDS. Early studies of dronabinol in this population showed promising increases in caloric intake and stabilization or gains in weight. However, later analysis showed that the effect sometimes represented accumulation of water or fat instead of the preferred lean body mass. Nabilone is not approved as an appetite stimulant. The evidence supporting the use of cannabinoids for cancer associated anorexia is limited and with mixed results. Cancer patients using cannabinoids may have improved enjoyment of food, increased protein intake, and improved premeal appetite. There are also reports improved quality of sleep while on cannabinoids.

Side Effects  Side effects are both physiologic (hypotension with reflex tachycardia, gastroparesis, ataxia, somnolence, dry mouth) and psychologic (euphoria, poor concentration, and – at high doses – anxiety, delusions, and hallucinations). Symptoms are typically dose related, vary among patients, and are worse in the elderly. Tolerance to many of these effects develops over 1 to 2 weeks. Dronabinol contains sesame oil and poses a risk of anaphylaxis to those with a hypersensitivity to sesame seeds or nuts. Relative contraindications include a history of seizures, and concurrent use of alcohol, sedatives, hypnotics, or other psychoactive agents. Patients taking cannabinoids should be advised not to drive.

Prescribing Guidelines  ANTIEMETIC: Dronabinol is dosed 5 mg/m² starting 2 hours before chemotherapy and every 4 hours thereafter, to a total of 4 to 6 doses daily. It can be titrated by 2.5 mg/m², to a per-dose maximum of 15 mg/m². Nabilone is dosed 1 mg twice daily, starting 3 hours before chemotherapy. It can be increased to 2 mg per dose, with a maximum of 6 mg/day in 3 divided doses. Nabilone is typically less expensive. OREXIGENIC: Dronabinol is started at 2.5 mg twice daily, one hour before lunch and dinner, or as a single 2.5 mg dose at night. It can be increased gradually to a maximum of 20 mg/day, in divided doses.
References

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