

*Summaries for Patients* are a service provided by *Annals* to help patients better understand the complicated and often mystifying language of modern medicine.

The full report is titled "Short-Term Effects of Cannabinoids in Patients with HIV-1 Infection. A Randomized, Placebo-Controlled Clinical Trial." It is in the 19 August 2003 issue of *Annals of Internal Medicine* (volume 139, pages 258-266). The authors are D.I. Abrams, J.F. Hilton, R.J. Leiser, S.B. Shade, T.A. Elbeik, F.T. Aweeka, N.L. Benowitz, B.M. Brecht, B. Kosel, J.A. Aberg, S.G. Deeks, T.F. Mitchell, K. Mulligan, P. Bacchetti, J.M. McCune, and M. Schambelan.

## Does Marijuana Affect Viral Loads in People with HIV?

### What is the problem and what is known about it so far?

People with HIV are one of the largest groups who use cannabinoids for medicinal purposes. Cannabinoids contain an active ingredient known as tetrahydrocannabinol that has mood-altering effects and sometimes stimulates appetite and reduces nausea. Marijuana and dronabinol (an approved drug for patients with weight loss and wasting from AIDS) are cannabinoids.

Doctors commonly treat HIV-infected patients with strong antiviral drugs (protease inhibitors). These drugs help stop the reproduction of HIV in the body and lower the amount of HIV (viral load) in the blood. Protease inhibitors and cannabinoids are metabolized by the same systems in the liver. Researchers worry that cannabinoids may interfere with the metabolism of protease inhibitors and change the levels of protease inhibitors available in the blood to fight HIV. Increased viral loads and progression of HIV might occur.

### Why did the researchers do this particular study?

To see whether marijuana and dronabinol adversely affect viral loads in patients with HIV infection who are taking protease inhibitors.

### Who was studied?

67 patients with HIV infection who were taking protease inhibitors (indinavir or nelfinavir). Most patients (89%) were men.

### How was the study done?

Researchers recruited HIV-infected patients who had been taking protease inhibitors for at least 2 months. All had smoked marijuana before and had stable viral loads for at least 4 months. They were randomly assigned to receive a marijuana cigarette, a dronabinol tablet, or a placebo tablet three times daily for 21 days. They stayed in a research unit, and researchers observed them taking all treatments. Every 3 days, they had repeated blood samples taken to measure viral loads, and immune function was measured weekly. The researchers then compared these outcomes and weight changes between groups.

### What did the researchers find?

The researchers found no large differences in viral loads between groups. Half of the patients in all three groups had undetectable viral loads throughout the study. Patients receiving cannabinoids had improved immune function compared with those receiving placebo. They also gained about 4 pounds more on average than those patients receiving placebo. Two patients stopped taking cannabinoids because of mind-altering symptoms, and one patient stopped because of headache and nausea.

### What were the limitations of the study?

The study took place over a short period of time in a research unit where patients were closely observed. The study involved few participants and could not definitively rule out harmful effects on viral loads or disease progression of either smoked or oral cannabinoids.

### What are the implications of the study?

These findings suggest no major, short-term harmful effects and possibly some beneficial effects of cannabinoids in HIV-infected patients taking protease inhibitors. Larger, longer trials are needed to confirm the findings.

Summaries for Patients are presented for informational purposes only. These summaries are not a substitute for advice from your own medical provider. If you have questions about this material, or need medical advice about your own health or situation, please contact your physician. The summaries may be reproduced for not-for-profit educational purposes only. Any other uses must be approved by the American College of Physicians.