Marijuana Slows SIV Disease Progression in Monkeys

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Monkeys infected with simian immunodeficiency virus (SIV) that were given chronic doses of the active ingredient in marijuana appeared to have slower SIV disease progression than monkeys given a placebo. These results, published in the June edition of the journal *AIDS Research and Human Retroviruses*, aren't proof that marijuana will slow human HIV progression, but they do indicate that the drug does not increase disease progression, as had been feared by some.

HIV infection has been long associated with illicit drug use, including chronic use of marijuana. Moreover, given the results of studies showing that heroine, crack cocaine and methamphetamine could potentially speed HIV disease progression, some feared that the same might be true of marijuana.

On the other hand, many people with HIV turned to marijuana in the early days of the epidemic to combat wasting disease and to treat nausea and chronic pain. An early, but short study in people with HIV indicated that marijuana did increase appetite in people with wasting and appeared to be generally safe. What's more, the synthetic marijuana alternative, Marinol, was tested more intensively and was found to be fairly safe and effective for pain relief, nausea and low appetite. Still, concerns have lingered about whether marijuana is safe during the long-term.

To test whether chronic marijuana use could negatively affect HIV disease progression, Lynn LaMotte, PhD, and her colleagues from Louisiana State University in New Orleans turned to a monkey model of HIV. They studied how quickly SIV—the monkey version of HIV—progressed in a type of monkey known as rhesus macaques when they were given daily doses of tetrahydrocannabinol (THC), the active ingredient in marijuana.

Rather than showing evidence that chronic THC might hasten SIV disease progression—as the authors originally hypothesized—LaMotte's team found that the opposite was true: Daily THC use actually showed evidence of slower disease progression.

Specifically, the monkeys who received THC tended to have lower viral loads, improvements in the ratio of CD4 to CD8 cells, increases in SIV-specific CD8 responses and lower inflammation than monkeys who received a placebo. Even more impressive, monkeys that were given THC were much slower to die than monkeys given the placebo.

The authors caution that the small sample size (fewer than 20 monkeys in all), could account for the variation in disease progression that they observed. They comment, however, that all the trends indicated slower disease progression with THC, and furthermore, there was certainly no evidence of faster disease progression.

LaMotte and her colleagues hypothesize that the improvements in disease progression could be due to three factors. First, that the treated monkeys retained more body weight. Second, that the THC actually directly suppressed SIV infection of cells. Lastly, that THC suppressed immune function in a beneficial way.

To determine whether regular use of marijuana in humans—especially when smoked, as many people do—slows HIV disease progression will require further study.

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