Early HIV Treatment Could Protect Against Brain Dysfunction

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Monkeys infected with simian immunodeficiency virus (SIV)—the primate version of HIV—were less likely to develop brain dysfunction if they were treated with antiretroviral (ARV) drugs soon after infection, according to a study published in the June 19 issue of *AIDS*.

Chronic brain dysfunction—potentially leading to cognitive problems such as reduced physical coordination as well as thinking and memory difficulties—is remarkably common in people with HIV, especially in those older than 40. Though more severe cases of HIV-associated dementia have decreased since the introduction of potent combination ARV treatment, milder forms of cognitive dysfunction have not.

To determine whether ARV therapy, started soon after infection, could protect the brain against this kind of brain injury, Maria Cecilia Marcondes, PhD, from the Scripps Research Institute in La Jolla, California, and her colleagues compared early treatment with no treatment in eight SIV-infected monkeys. The treated monkeys received Viread (tenofovir) and Viracept (nelfinavir). The non-treated monkeys received a placebo tablet.

Three of the treated monkeys had virus levels in blood below the limit of detection, while one of the treated monkeys continued to have measurable virus.

Despite the fact that neither Viread nor Viracept easily penetrates the central nervous system—something that researchers have theorized might be crucial for optimal cognitive protection—early treatment substantially reduced virus levels in the brain and reduced cellular evidence of inflammation. This included a decrease in an inflammatory protein called interferon alpha. Monkeys who were treated also had improvements in cognitive function, such as improved motor skills, compared with untreated monkeys. The authors are encouraging further study of early treatment on brain function, in both monkeys and humans.