# Single-tablet HIV treatment shows better outcomes over multi-tablet regimen

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Taking one tablet per day, versus multiple tablets, appears to result in better outcomes for HIV patients. Credit: Mitch Mirkin

HIV patients on a single-tablet daily regimen had better treatment retention and viral suppression than patients taking multiple pills, in a

study by a Michael E. DeBakey Veterans Affairs Medical Center researcher and his colleagues.

The results were published in the Feb. 25, 2018, issue of *AIDS Care*.

HIV, or human immunodeficiency virus, weakens the human immune system. It increases the risk of catching other common infections and conditions that don't usually affect people with stronger immune systems. As the infection progresses, it can lead to AIDS (acquired immunodeficiency syndrome). If untreated, the average survival time with HIV is 9 to 11 years.

In 2016, more than 28,000 veterans with HIV received care from VA.

HIV care has come a long way in recent years. Combination antiretroviral therapy was introduced in the 1990s. This treatment led to significant reductions in deaths due to HIV infection. However, these early treatments were not without their downsides. Early therapy involved complex regimens involving up to a dozen pills each day.

Newer treatment regimens are typically taken only once per day. Once-daily regimens are the new standard for HIV care. Having to take medicine only once per day decreases pill burden, which could improve patients' quality of life and treatment adherence. Some of the newest regimens require only a single daily pill.

While studies have shown that patients prefer a single-tablet regimen, not much research has been done on whether a single pill results in better treatment outcomes than a multiple-tablet regimen. Some of the common multiple-tablet regimens are becoming available in generic versions, meaning they will be less expensive. Insurance companies may insist on these regimens if they are cheaper than a single tablet.

To test whether one treatment approach was better, the research team studied more than 1,000 patients at a non-VA Texas clinic who were just beginning HIV treatment. They looked at 622 patients on a single-tablet regimen and 406 on a multi-tablet regimen, all taken once daily.

While both regimens were based around the drug teofovir, they did not include the exact same combination of medicines. The multi-tablet regimen also contained an antiretroviral HIV drug class called boosted protease inhibitors, and the single-tablet regimen contained a different class called non-nucleoside reverse transcriptase inhibitors.

After following the patients for a year, the researchers found that the single-tablet regimen compared favorably with the multi-tablet regimen. They measured three aspects of treatment: adherence, retention, and HIV suppression.

Treatment adherence means that patients took their medicine more than 80 percent of the time, based on prescription fills. Interestingly, the two regimens had similar rates of adherence. So that factor alone would not explain the apparent edge for the single-tablet group.

To show retention in care, patients had to visit their doctors for viral load measurements at least twice, at least three months apart, during the first year. Eighty-one percent of the single-tablet group showed retention, compared with 73 percent of the multi-tablet group.

HIV suppression was defined as a viral load in the blood of less than 400 copies per milliliter. In the single-tablet group, 84 percent had viral suppression after the first year. In the multi-tablet group, 78 percent showed suppression.

While the results suggest that single-tablet regimens may lead to better clinical outcomes, more research is needed. Dr. Thomas P. Giordano, a

researcher at the Michael E. DeBakey VA Medical Center in Houston and corresponding author on the study, explained that it is not yet entirely clear why the single-pill regimen appears to work better.

"There were not differences in adherence as we could measure it via pharmacy refill dates, which suggests that maybe the single-tablet regimens are more efficacious," he said. "It could also be that the persons who got the multi-tablet regimens had more barriers to care and that is why they did more poorly." He says more studies will be needed to help tease out the differences in the types of medications being used versus the effect of pill burden.

Future research will also need to focus on which treatment is more cost-effective, since single-pill regimens may prove to be more expensive.

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