Association of ART Type and Adherence with Viral Suppression:
An Observational Study of a Clinical Population of People with HIV

The goal of anti-retroviral therapy (ART) is to keep HIV viral load to undetectable levels (<200 copies/mL). In order for ART to be most effective, it is important that people on these medications stay adherent and take them as prescribed, with 90% adherence being a commonly used standard.

Some kinds of ART may be more "forgiving" of poor adherence. Forgiveness means that people living with HIV may remain virally suppressed at lower than recommended adherence levels (that is, less than 90%).

The main goal of this study was to determine how ART forgiveness varies depending on ART type and a person's adherence level.

- To do this we used the claims and clinical records, including pharmacy fill data, of 3,552 HIV-positive members of a Medicaid managed care plan who were 18 years or older and continuously enrolled from 2017 through 2019.
- We used an analytic technique to sort members with similar patterns of ART medication usage during that time period into distinct groups. This method takes into account the complexity of real-world ART usage, including multiple medications and ART switching.
- Finally, we examined each ART medication group separately to determine whether odds of viral suppression were different at 90% or above versus lower levels (< 50%, 50% to < 80%, 80% to < 85%, 85% to < 90%).

Among members with valid pharmacy data, 66% were men, 54% were Black, 35% were Hispanic/Latinx, and the average age was 45 years. Members reported good adherence, with two-thirds of members reporting over 90% adherence to their ART medications.

The analysis resulted in five groups with distinct ART medication patterns over three years. These medication patterns varied in number of tablets (single-tablet, 3-tablet) and in drug class (containing integrase strand transfer inhibitors [INSTIs], boosted protease inhibitors [PIs], and nucleoside reverse transcriptase inhibitors [NRTIs]).

When we looked at each of the ART medication groups in terms of ART forgiveness, we found that the groups did not differ in maintaining viral suppression with at least 80% adherence, compared to 90% adherence. For example, medication patterns described by boosted PIs were generally as effective as patterns described by medications containing INSTIs.

_____

Conclusions

These findings add to a growing body of research suggesting that ART adherence required for viral suppression with newer classes of HIV medication may be lower than the 90–95% standard used in clinical settings.

These findings can help healthcare providers communicate with patients about their medications, especially those who have difficulty maintaining near-perfect adherence. This includes individuals who are experiencing unstable housing, mental health conditions, or problems with drugs or alcohol.

This study looked mainly at viral load, but it is important to note that there are other patient outcomes that are impacted by poor adherence, like resistance to ART and disease progression. So providers should still encourage high levels of adherence, but also reassure patients who cannot maintain those levels that they can still have good viral load outcomes even if they miss occasional doses.

For more information, visit https://brookdale.org/projects/the-impact-of-regimen-and-medication-adherence-on-viral-suppression-among-vulnerable-people-with-hiv/