Addition of genotypic resistance testing did not improve virologic response in patients with HIV virologic failure

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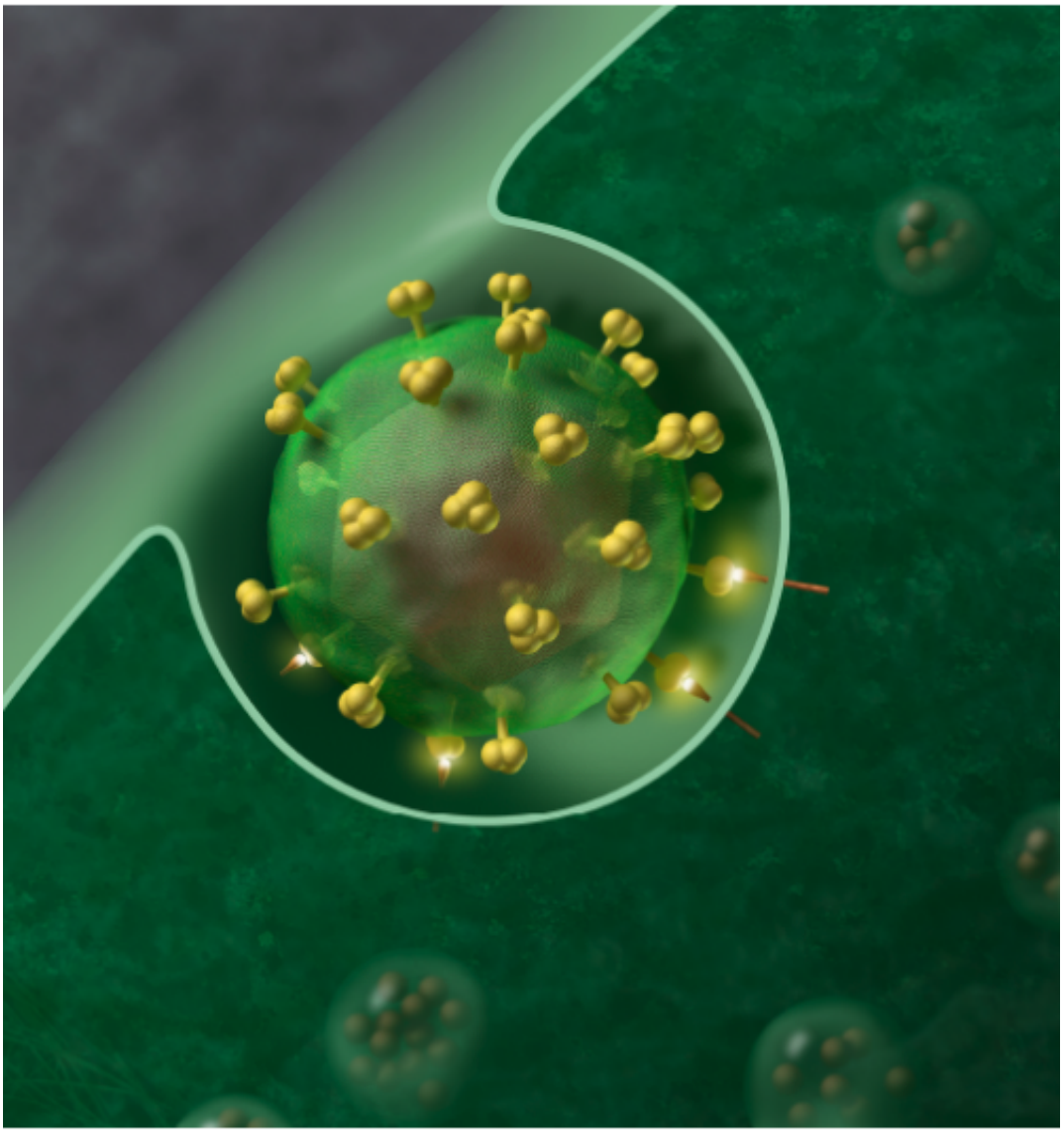

HIV-1 Virus. Credit: J Roberto Trujillo/Wikipedia

A randomized controlled trial found that the addition of genotypic resistance testing to routine care did not improve virologic suppression among persons whose first-line antiretroviral therapy (ART) failed in public-sector HIV clinics in Uganda and South Africa. These results reinforce the critical need for and persistent challenge of finding effective interventions for persons who have virologic failure after ART initiation in the public sector in sub-Saharan Africa. The findings are published in *Annals of Internal Medicine*.

Virologic failure in HIV predicts the development of drug resistance and mortality. Genotypic resistance testing where a patient's blood is analyzed for the presence of specific genetic mutations that are known to cause resistance to specific drugs, is the standard of care after virologic failure in high-income settings but is rarely implemented in sub-Saharan Africa where virologic failure in HIV is a major public health threat.

In the REVAMP (Resistance Testing Versus Adherence Support for Management of Patients with Virologic Failure of First-Line Antiretroviral Therapy in sub-Saharan Africa), researchers from Massachusetts General Hospital enrolled 840 adults in South Africa and Uganda with HIV and viral load levels of 1,000 copies/mL or higher and randomly assigned them to immediate genotypic resistance testing or standard of care, including adherence counseling sessions and repeated viral load testing. Most of the patients were receiving a regimen of tenofovir, emtricitabine, and efavirenz at enrolment. Virologic suppression was tested at 9 months. The proportion of patients with viral load levels below 200 copies/mL did not differ between the two groups.

The authors of an accompanying editorial from Weill Cornell Medicine noted that the study has significant strengths, including its real-world setting in public health ambulatory clinics. However, participants were

receiving nonnucleoside reverse transcriptase inhibitor (NNRTI)–based regimens at study entry, which is no longer the standard of care. The authors suggest that future research explore the use of drug resistance testing in managing virologic failure with more contemporary antiretroviral therapy, such as integrase inhibitor–based regimens, as optimal antiretroviral management is the key to further reductions in HIV morbidity, mortality, and transmission worldwide.

More information: Study: www.acpjournals.org/doi/10.7326/M21-2229

Editorial: www.acpjournals.org/doi/10.7326/M21-3903

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