



REPRIEVE



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Identification of pre-infection markers and differential plasma protein expression following SARS-CoV-2 infection in people living with HIV

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Background

People with HIV (PWH) are at equal risk of getting COVID but have an increased risk of having a more severe case of COVID. The reasons for this are not well understood. Symptoms of long-COVID have also increased the burden of other diseases, like underlying cardiovascular disease.

Goals of the Study

In this analysis, we studied how proteins in the blood changed after infection by SARS-CoV-2, the virus that causes COVID, and differences in proteins before infection that could predict future COVID. We performed this analysis in a group of participants from the REPRIEVE Trial, a global clinical research study testing whether treatment with a statin medication (cholesterol-lowering medication) helps prevent heart disease among PWH.

➤ The participants:

- 207 participants (152 male)
 - 94 participants had a confirmed past COVID diagnosis and 113 had no past COVID diagnosis
- Median age at enrollment: 50 years
- Median body mass index (BMI): 25.9 kg/m²

➤ The findings:

- A set of proteins, including MMP7, NOS3, CNDP1, and TR-AP, increase more over time in PWH who had COVID compared to PWH who did not.
- Proteins important for regulating the immune system, including CASP-8, were decreased more over time in both mild and moderate-severe COVID compared to those without COVID.
- Granzymes GZMB and GZMH (a type of protein that can cause virus-infected cells to die) decreased more over time in PWH with moderate-severe COVID compared to PWH who did not have COVID, but this decrease was not observed in PWH who had mild COVID compared to no COVID.
- Baseline levels of granzymes GZMA, GZMB, and GZMH were independently associated with future moderate-severe COVID-19 in PWH.

In Summary: Our analysis identified key proteins that relate to moderate-severe COVID and baseline immune dysregulation, and whose levels changed after having COVID. These findings help us to better understand the biological reasons for PWH experiencing more severe COVID.

REPRIEVE Trial Website: reprivetrial.org

The findings shared in this summary are from the REPRIEVE population at a specific point in time. These findings are descriptive and not intended to change clinical care. If you have questions about what you've read, please talk to members of the REPRIEVE study team at your local site or a health care provider