COVID-19 in HIV-positive patients investigated for tuberculosis in the context of the FujiLAM study

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Background

People with immunosuppression may be particularly vulnerable to SARS-CoV-2 and some symptoms of infection by SARS-CoV-2 and TB are similar. Dual infection with both TB and COVID-19 may also lead to poorer treatment outcomes. This study was nested into the FujiLAM study and assessed the prevalence of exposure and infection by SARS-CoV-2 among HIV patients investigated for TB.

Methods

A prospective observational study including HIV-positive patients with symptoms of TB (group 1) and patients with advanced HIV disease and no symptoms of TB (group 2) in Uganda, Kenya, and South Africa. All patients were investigated for TB and were proposed SARS-CoV-2 antibody testing at the first and the 6-month consultation. SARS-CoV-2 PCR was proposed to patients with symptoms of TB at the first consultation and patients with symptoms of Covid-19 at any time during follow-up. Exposure to SARS-CoV-2 was defined by the detection of antibodies, while the infection was determined by PCR.

Findings

In total, 1466 HIV-positive patients included in the FujiLAM study were investigated for SARS-CoV-2 (985 patients in group 1 and, 481 patients in group 2). Of these, 1254 (85.5%) patients consented to SARS-CoV-2 antibody testing (829 in group 1 and 425 in group 2), and 1188 (94.7%) of them had results. Overall, 27.9% (331/1188) of patients had a positive serology result. According to the CD4 count, a positive serology result was found in 22.3% (110/443) of patients with CD4<200, and 31.7% (213/671) of those with CD4>200, p<0.001. Among patients with symptoms of TB who accepted PCR testing, 8.3% (40/483) had PCR positive results, of whom, 12.5% (5/40) had confirmed TB. Finally, among the 40 patients that were PCR positive, 15 (35.7%) were started on TB treatment.

Interpretations

This study reports moderate to high exposure to Covid-19 among patients investigated for TB. Also, it reveals that HIV-positive with CD4<200 have lower Covid-19 serology positivity than those with CD4≥200. This finding may have implications regarding the level of protection for immunosuppressed HIV-positive patients who have passed the disease or for vaccination strategy. Indeed, people living with HIV and with a low levels of CD4 should be prioritized for COVID-19 vaccination.

Moreover, a considerable proportion of Covid-19 infected patients were also diagnosed with TB.