

Are people living with HIV at higher risk of severe and fatal COVID-19?

TITLE

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BACKGROUND: WHO has established a Global Clinical Platform aiming to assess clinical features and risk factors for severe/fatal COVID-19 among hospitalized individuals.

METHODS: Between January 2020-June 2021 anonymized individual-level clinical data from 338,566 patients hospitalized in 38 countries were reported to WHO using a standardized case report form. Descriptive and regression analyses assessed whether HIV status was a risk factor for severity at admission and in-hospital mortality among people hospitalized for COVID-19.

RESULTS: Of 197,479 patients reporting HIV status, 8.6% (16,955) were living with HIV (PLHIV), and 94.6% (16,283) were from Africa; 37.1% were male, mean age was 45.5 years, 38.3% were admitted with severe or critical illness and 24.7% died in-hospital. 91.5% of 10,166 PLHIV were on antiretroviral therapy (ART). Compared to those without HIV, PLHIV had 15% increased odds of severe/critical presentation (aOR=1.15, 95%CI 1.10-1.20) and were 38% more likely to die in-hospital (aHR=1.38, 95%CI 1.34-1.41). Among PLHIV, male sex, age 45-75 years, and having chronic cardiac disease or hypertension increased the odds of severe/critical COVID-19. Male sex, age >18 years, diabetes, hypertension, malignancy, TB, or chronic kidney disease increased the risk of in-hospital mortality. In an exploratory subgroup analysis in a subset of 9097 hospitalized individuals reporting ART information, PLHIV on ART were 17% less likely to die ($p < 0.048$) and 40% less likely to be admitted with severe disease than those not on ART ($p < 0.001$). However, both PLHIV on ART (aHR=1.48, 95%CI 1.39-1.57) and those not on ART (aHR=1.79, 95%CI 1.48-2.16) had a higher risk of death relative to HIV negative people.

A similar exploratory analyses on a sample of 5793 hospitalized individuals reporting viral load (VL) information showed that both people with VL <1000 c/ml (aHR=1.77, 95% CI 1.57-1.99) and those with VL >1000 c/ml (aHR=1.45, 95% CI 1.32-1.58) have an increased risk of death compared to HIV negative individuals.

CONCLUSIONS: In this sample of hospitalized people contributing data to the WHO Global Clinical Platform, HIV was an independent risk factor for both severe/critical COVID-19 at admission and in-hospital mortality. These findings have informed the WHO COVID-19 Clinical Management Guidelines and SAGE recommendations around COVID-19 vaccination prioritization.