

# Clinical outcomes of coronavirus disease 2019 in people living with human immunodeficiency virus in South Korea: A nationwide population-based cohort study

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March 11, 2024

## Abstract

**Background:** We aimed to compare the epidemiological and clinical characteristics of coronavirus disease 2019 (COVID-19) in people living with human immunodeficiency virus (HIV) (PLWH) with those in the general population. **Methods:** This nationwide descriptive epidemiological study was conducted in South Korea between January 2020 and February 2022. The National Health Insurance claims data covering the whole nation were collected through the Health Insurance Review and Assessment Service. **Results:** Among 3,653,808 individuals who were diagnosed with COVID-19, 1,311 (0.04%) were PLWH. All the PLWH received antiretroviral therapy, and 26.47% had more than one underlying disease other than HIV infection. The overall in-hospital mortality rates of PLWH and the general population were 0.76% and 0.25%, respectively ( $P=0.002$ ). According to the Cox proportional hazard model, no significant difference was observed in the in-hospital mortality rate [hazard ratio (HR): 1.80, 95% confidence interval (CI): 0.70–4.67] between PLWH and the general population. However, progression to severe or critical COVID-19 was more common in PLWH (HR: 2.70, 95% CI: 1.37–5.33). In PLWH diagnosed with COVID-19, a multivariable Cox regression analysis found old age ([?]60 years old) (HR: 6.9; 95% CI 2.57–18.56) and diabetes mellitus (HR: 5.13; 95% CI: 2.02–13.00) as the independent risk factors for severe or critical COVID-19. **Conclusions:** PLWH had a significantly higher risk of severe or critical COVID-19 than that of the general population. Our findings suggest the need for applying differentiated strategies to decrease the impact of COVID-19 on PLWH.

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