Estimation of Shedding Time in Laboratory-Confirmed COVID-19 Cases in South Africa: A Population-Based Record Linkage Study, March-December 2020

ABSTRACT

Background

In South Africa, COVID-19 cases are notified through the NMCList platform while hospitalized cases are reported on the DATCOV platform. It is crucial to estimate the duration of SARS-CoV-2 shedding to inform public health interventions. We aimed to estimate viral shedding time among laboratory-confirmed COVID-19 cases in South Africa.

Methods

We analyzed COVID-19 PCR results reported on the NMCList and DATCOV platforms from 5 March to 31 December 2020. We included cases with at least 2 consecutive positive PCR tests and a subsequent negative test. We performed multiple linear regression to determine the association between shedding time and predictor variables (age, sex, admission status and province). A p-value below 0.05 was considered to be statistically significant.

Results

We included 2752 cases that met the inclusion criteria. About 39.9% (1099/2752) of participants were inpatients and 60.1% (1653/2752) were outpatients. The median shedding time was 17 days (range: 1–128). There was no significant difference in shedding time between males (median:16 days, range:1-128) and females (median:17 days, range:1–94) and between hospitalized patients (median: 16 days, range 1–108) and outpatients (median:17 days, range:1–128). Individuals aged 0-4 years had the lowest shedding time (median:14 days, range:1–72). After adjusting for age, sex and province, shedding time was shorter for hospitalized patients compared to outpatients (coefficient: -0.14, CI: -0.24 ─ -0.03, P-value: 0.014).

Conclusion

Shedding time differs between hospitalized and outpatients. Further studies are required toexplore the association between comorbidities and SARS-CoV-2 shedding time.

Keywords: COVID-19, SARS-CoV-2, viral shedding time, South Africa, population-based