High transmission rates of early omicron sub-variant BA.2 in Bangkok, Thailand

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Abstract

Omicron emerged as the fifth variant of concern of SARS-CoV-2 coronavirus pandemic in late 2021 and rapidly overtook the previously predominant Delta variants with a significantly faster transmission rate and unique mutations on the spike gene. Hence, the ability to identify viral variants rapidly and affordably in large number of patients, which facilitates the monitoring of the transmission and clinical impact of new variants, is needed to obtain information for updating the public health policy. In this study, we evaluated the capability of two RT-PCR and mass spectrometry-based SARS-CoV-2 variant classification platforms to distinguish Delta, Omicron BA.1, and Omicron BA.2 variants in 618 COVID-19-positive samples from patients in Bangkok collected during November 2021-March 2022. Analysis of the time-evolution pattern of SARS-CoV-2 variant profiles indicated that the BA.1 and BA.2 possess up to 2-3 times higher transmission rates than the Delta variant. Our study showcases a cost-effective virus surveillance that enables a quantitative estimation of variant-specific public health impact.

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