Surveillance of seasonal influenza viruses during the COVID-19 pandemic in Tokyo, Japan, 2018–2023, a single-center study

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Abstract

Introduction: COVID-19 pandemic led to significant reductions in influenza detection worldwide, making influenza trends challenging to monitor. The number of influenza cases decreased significantly in Japan, raising concerns about the potential risk of decreased immunity to influenza in the population. Our single-center study aimed to investigate influenza trends before and during the COVID-19 pandemic in Tokyo, Japan. Materials and Methods: This cross-sectional study included patients of all ages who visited Tokyo Shinagawa Hospital between April 1, 2018, and March 31, 2023. Influenza and COVID-19 tests were conducted using Quick Navi-Flu2 and polymerase chain reaction (PCR). We analyzed data from before and during the COVID-19 epidemic, based on patient background, hospitalization, and deaths, collected from medical records. Results: A total of 12,577 influenza tests were conducted, with approximately 100 tests consistently performed each month even in the influenza off-season. Throughout the observation period, 962 positive cases were identified. However, no cases were observed for 27 months between March 2020 and November 2022. Cases of influenza A were observed again in December 2022, and cases of influenza B were observed again in March 2023, similar to the influenza incidence reports from Tokyo. The positivity rate during the 2022–2023 winter season was lower than before the COVID-19 epidemic and decreased in elderly patients, with no hospitalizations or deaths observed. Conclusion: This single-center study provided actual trend data for influenza patients before and during COVID-19 outbreaks in Tokyo, which could offer insights into the potential impact and likelihood of influenza virus infection in Japan.

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