**Comparing outcomes of COVID-19 and influenza among hospitalized patients in five countries and areas in the European Severe Acute Respiratory Infection Vaccine Effectiveness Network, 2021-2024**

Background

Understanding changing COVID-19 severity can guide public health interventions in the post-pandemic period. We compared in-hospital severity of COVID-19 to influenza among hospitalized severe acute respiratory infection (SARI) patients in European SARI Vaccine Effectiveness (EuroSAVE) Network, which includes five countries and areas (Albania, Georgia, Kyrgyzstan, North Macedonia, and Kosovo\*).

Methods

We included patients admitted to 24 hospitals from December 2021 – March 2024 who met the WHO SARI case definition. All patients had a respiratory specimen collected and tested for SARS-CoV-2 and influenza by RT-PCR. We employed a cohort study design and calculated the adjusted odds ratios (aORs) and 95% confidence intervals (CI) for severe outcome (ICU admission, mechanical ventilation, or in-hospital death) and in-hospital death by virus test result. We used logistic regression, adjusting for baseline patient characteristics. Influenza-positive patients were the reference group. We grouped SARS-CoV-2 patients by hospital admission date: Period (P)1 (6 December 2021- 18 December 2022); P2 (19 December 2022- 9 July 2023); and P3 (10 July 2023- 16 March 2024).

Results

Of the 5,800 patients included, 2,991 (52%) were male, 3,488 (60%) were ≥ 60 years old, 514 (8%) were influenza-positive, and 876 (15%) were SARS-CoV-2-positive. The aOR for severe outcomes among SARS-CoV-2-positive patients was 1.97 (95% CI 1.33-2.95) in P1, 2.63 (95% CI 1.66-4.17) in P2, and 1.88 (95% CI 1.01-3.39) in P3. The aOR for death among SARS CoV-2-positive patients was 3.45 (95% CI 1.92-6.59) in P1, 1.45 (95% CI 0.60-3.36) in P2, and 1.98 (95% CI 0.78-4.76) in P3.

Conclusions

SARS-CoV-2-positive SARI patients were more likely to have severe outcomes compared to influenza-positive SARI patients for all periods, including the post-pandemic period. The odds of death for SARS-CoV-2 patients was highest in the earliest period. These results underscore the continued need for COVID-19-related public health interventions, including up-to-date COVID-19 vaccination.

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\*For the purposes of this abstract, all references to “Kosovo” should be understood as “Kosovo (in accordance with security council resolution 1244 (1999)).”