



COVID-19 MORTALITY AMONG FULLY VACCINATED AND UNVACCINATED HOSPITALIZED PATIENTS

TOLIĆ E.¹, DARAPI D.¹, Samaržija M.^{1,2}, Pavliša G.^{1,2}, Vukić Dugac A.^{1,2}, Popović F.¹, Baričević D.¹, Pevec B.¹, Muršić D.¹, Basara L.¹, Štajduhar A.¹, Budimir B.¹, Radić V.², Doder F.², Janković Makek M.^{1,2}

¹ University Hospital Centre Zagreb, Zagreb, Croatia
Clinic for respiratory diseases "Jordanovac"

² University of Zagreb, Zagreb, Croatia
School of Medicine

Objective:

AIM Since the outbreak of the pandemic, more than 6 million deaths due to COVID-19 have been reported worldwide. With 11 billion doses administered since their emergence in late 2020, the vaccines have proven to be effective in providing protection against symptomatic disease, severe forms of the disease, and hospitalization. Despite promising results, only 55% of Croatia's population is fully vaccinated, and vaccination hesitancy remains at a considerable level. The aim of this study was to determine the impact of vaccination on COVID-19 mortality.

METHODS We retrospectively analyzed data from patients admitted to the COVID-19 departments of University Hospital Centre Zagreb from September 2021 to February 2022. Patients with unknown



immunization status, previously infected patients, partially vaccinated, and those vaccinated with a booster dose were excluded from the study. The remaining patients were divided into 2 groups: the first group included unvaccinated patients, and the second group included fully vaccinated patients at least 14 days before symptom onset (those who received 2 doses of Pfizer-BioNTech or Moderna mRNA vaccines, 2 doses of the Oxford/AstraZeneca vector vaccine or 1 dose of Janssen/Johnson&Johnson vector vaccine). COVID-19 treatment guidelines established by the Ministry of Health of the Republic of Croatia were used to categorize disease severity.

RESULTS The first group included 257 unvaccinated patients (139F, 118M) aged 20 to 94 years ($M=69.9$, $SD=15.5$), and the second group consisted of 118 vaccinated patients (48F, 70M) aged 38 to 92 years ($M=70.7$, $SD=12.3$). There were 4 asymptomatic cases (1.6%) among unvaccinated patients, 24 cases of mild and moderate disease (9.3%), and 228 patients with severe and critical illness (88.7%). Among vaccinated patients 2 were asymptomatic (1.7%), 17 had mild to moderate COVID-19 infection (14.4%) and 99 had severe and critical illness (83.9%). The unvaccinated group had a significantly higher mortality rate (43.6%) compared to vaccinated patients (25.4%). The mortality risk during the acute COVID-19 disease was reduced by 41.68% in fully vaccinated patients ($RR=0.58$; 95%CI 0.42-0.82).

CONCLUSION Our data indicate that breakthrough COVID-19 in hospitalized patients has significantly lower mortality compared to unvaccinated patients with similar characteristics. Our results align well with already published data about vaccine effectiveness in protection against severe and lethal COVID-19. Given the complex correlation between COVID-19 infection and vaccines, the emergence of new viral variants and vaccine types, and the fact that data may vary according to existing comorbidities and disease severity, continuous research is required to build trust in COVID-19 vaccines.



htd

hrvatsko
torakalno
društvo

Croatian
Thoracic
Society

TORAKS 2022

12. kongres Hrvatskog torakalnog društva
12th Congress of the Croatian Thoracic Society

Hotel Westin, Zagreb / 25.-28.5.2022.