

Abstract Type : Poster

Abstract Submission No. : 1596

Association of COVID-19 Vaccination with Risk of COVID-19 Infection, ICU admission, and Death in Dialysis Patients with ESRD: A Nationwide Cohort Study in South Korea

Jae Young Kim¹, Hyung Woo Kim², Seung Hyeok Han², Tae Ik Chang¹

¹Department of Internal Medicine-Nephrology, National Health Insurance Service Ilsan Hospital, Korea, Republic of/
College of Medicine, Institute of Kidney Disease Research, Yonsei University, Seoul, Republic of Korea

²Department of Internal Medicine-Nephrology, Severance Hospital, Korea, Republic of/
College of Medicine, Institute of Kidney Disease Research, Yonsei University, Seoul, Republic of Korea

Objectives: Dialysis patients are at increased risk for morbidity and mortality after SARS-CoV-2 infection. Although antibody response to COVID-19 vaccination is lower in patients with end-stage renal disease (ESRD), there have been few studies assessing the effectiveness of COVID-19 vaccination in this patient population.

Methods: We examined the association between COVID-19 vaccination and the risk of COVID-19 infection, related intensive care unit (ICU) admission, and death in a nationwide case-control study comprised of 14,498 vaccinated patients and propensity-score matched 14,498 unvaccinated controls, who were followed from February 26, 2021 through December 31, 2021, using data from the Korean National Health Insurance Service with linkage to the Korea Centers for Disease Control and Prevention data.

Results: Of the entire 28,996 study population (mean [SD] age, 63.2 [14.5] years; 15,556 [53.7%] men), 344 (1.2%) were infected with COVID-19. There were 115 COVID-19 infections (0.8%) and 23 severe COVID-19 infections (0.1%), defined as a composite of ICU admissions or deaths, in the vaccinated cohort; while 229 COVID-19 infections (1.6%) and 60 severe COVID-19 infections (0.4%) in the unvaccinated cohort. COVID-19 vaccination was associated with a lower risk of COVID-19 infection (hazard ratio [HR], 0.46; 95%CI, 0.67-0.58; $P < 0.001$) and severe infection (HR, 0.32; 95%CI, 0.19-0.52; $P < 0.001$). These associations persisted across various subgroups of age, sex, and comorbidity status.

Conclusions: In this large national study of Korean dialysis patient population, COVID-19 vaccination was associated with significantly lower risk of COVID-19 infection, related ICU admission, and death. These findings suggest that COVID-19 vaccination is still important even in patients with ESRD who were undergoing dialysis.