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## **Antibody Response to COVID-19 Vaccination in Patients on Chronic Hemodialysis**

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**Objectives:** Since patients on hemodialysis (HD) are known to be vulnerable to COVID-19, many studies were conducted regarding effectiveness of COVID-19 vaccine in HD patients in Western countries. Here, we assessed antibody response of HD patients for one year post-vaccination to identify duration and effectiveness of COVID-19 vaccine in Korean population.

**Methods:** We compared antibody response of COVID-19 vaccine in HD patients with healthy volunteers. Patient and control groups had two doses of ChAdOx1 nCoV-19 and mRNA-1273, respectively. Immunoglobulin G (IgG) was measured before vaccination, two weeks after the first dose, two- and four-weeks, three- and six-months, and one year after the second dose. Neutralizing antibody was measured before vaccination, at two weeks, three- and six-months, and one year after the second dose. Since the third dose was started in the middle of the study, we analyzed the effect of the third dose in patient group. In control group, we enrolled participants who completed three doses of vaccination.

**Results:** 32 patients with two doses of ChAdOx1 nCoV-19 and 15 healthy participants with three doses of mRNA-1273 were finally enrolled in this study. Although antibody production was weaker than control group, patient group showed increase in IgG and neutralizing antibody after two doses of vaccination. Although 19 patients had third dose (BNT162b2 or mRNA-1273), it did not affect antibody response. Antibody produced by vaccination did not wane over time until one year.

**Conclusions:** Two doses of vaccination led to significant antibody response in HD patients, and the antibody did not wane until one year.

Figure1. Study timeline