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Severity of Post COVID-19 Organizing Pneumonia in Kidney Transplant Recipients according to SARS-CoV-2 Vaccination

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Case Study: Kidney transplant recipients (KTR) are on maintenance immunosuppression, and therefore showed higher risk for infection including Coronavirus disease 2019 (COVID-19). In addition, the risk of progression to severe state of COVID-19 infection such as acute respiratory distress syndrome (ARDS) can increase in comparison with in the general populations. Therefore, to prevent COVID-19 infection, the importance of vaccination has been emphasized. However, the beneficial effect of vaccination in KTRs has not been fully investigated yet. In our hospital, we experienced 24 KTRs who had the COVID-19 infection, and also showed post COVID-19 organizing pneumonia (OP). We analyzed the clinical outcomes of those patients according to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) vaccination history. Eighteen patients received vaccination and the other six did not. All patients showed prolonged symptoms for more than a week after diagnosis of COVID-19 and typical chest tomographic findings including bilateral ground glass opacities or lobar consolidation. The patients were treated with same protocol including glucocorticoid and empirical antibiotics. Post COVID-19 OP was worse in unvaccinated KTRs. Two out of six unvaccinated patients needed continuous renal replacement therapy (CRRT) and mechanical ventilation (MV), and expired. One out of eighteen vaccinated KTRs required CRRT and MV, and expired. We also found the adverse outcome in older KTRs. Two out of six KTRs over the age of 65 required CRRT and MV, and did not survived. One out of eighteen KTRs under the age of 65 demanded CRRT and MV, and expired. Among 6 older patients, 2 of the 4 unvaccinated patients required RRT and MV, and died of post COVID-19 OP. Vaccinated KTRs, especially in older patients, showed better recovery after post COVID-19 OP. Our results suggest that SARS-CoV-2 vaccination may help to prevent the development of severe form of post-COVID-19 pneumonitis in KTRs who infected with COVID-19.