

Abstract Submission No. : 9055

May 27(Fri), 08:30-10:30 Acute Kidney Injury 1

AKI in Patients With COVID-19

Jeong-Hoon Lim

Kyungpook National University Chilgok Hospital, Korea, Republic of

The coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is still on progression around the world. The pulmonary manifestations of COVID-19 are most prominent, but acute kidney injury (AKI) is also a common complication of COVID-19. Although the initial reports from China showed low incidence of AKI, but subsequent reports from other countries reported an incidence of nearly 30%. Especially, AKI rate of COVID-19 patients in the intensive care unit was as high as 50% to 70%.

There are multifactorial pathophysiologic mechanisms in COVID-19-associated AKI. The most common histopathologic findings in COVID-19-associated AKI is acute tubular injury characterized by focal acute tubular necrosis. Regional inflammation, renal compartment syndrome, tissue hypoxia, hypoperfusion, nephrotoxic-induced injury (antivirals or antibiotics), and rhabdomyolysis may contribute to acute tubular injury in COVID-19. In addition, ACE2, which is a receptor by which SARS-CoV-2 gains entry into cells, is predominantly expressed in the proximal tubules, so direct viral invasion can be caused. In addition to mediating SARS-CoV-2 entry into cells, ACE2 acts as an enzyme within the non-classic renin-angiotensin system that competing with the classic renin-angiotensin system. Therefore, withholding renin-angiotensin system inhibitors in COVID-19 patients has been intensely debated, but so far, it does not appear to affect outcomes. Other factors such as vascular injury, collapsing glomerulopathy, and indirect effects of infection can also contribute to COVID-19-associated AKI. Renal recovery rates in COVID-19 patients who occurred AKI are almost 70%, and they had greater rate of estimated glomerular filtration rate decrease after discharge compared with non-COVID-19-associated AKI. Although COVID-19-associated AKI is strongly associated with in-hospital mortality, there is no specific treatment yet, so future researches are needed.