

Kidney injury associated with COVID-19

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1 As many as 40% of patients admitted to hospital with COVID-19 have acute kidney injury

Acute kidney injury (AKI) is a common complication of coronavirus disease 2019 (COVID-19) and is usually related to disease severity. Accordingly, it typically occurs in patients who are critically ill, those with pre-existing conditions, older adults and Black people.¹

2 Patients commonly present with dipstick-positive hematuria and mild proteinuria¹

Uncommon presentations for AKI include nephrotic range proteinuria reflecting glomerular damage and new-onset glucosuria as a result of proximal tubular damage.² Referral to a nephrologist should be sought for patients with severe COVID-19 who have a greater than 50% increase in their creatinine level compared with baseline, those with urinary protein excretion of more than 1 g/d and for those with a history of chronic kidney disease (estimated glomerular filtration rate < 60).

3 Hemodynamic insults, immunologic injury, hypercoagulability and microangiopathy drive kidney injury associated with COVID-19³

There is no strong evidence that severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has direct cytotoxic effects on the kidney despite the abundant expression of angiotensin-converting enzyme 2 (ACE2) in the kidney, which is used by SARS-CoV-2 to enter host tissue.²

4 Patients on long-term treatment with ACE inhibitors and angiotensin receptor blockers are not at increased risk of COVID-19

Use of ACE inhibitors and angiotensin receptor blockers does not impart a higher risk of COVID-19² or having poor outcomes from the disease, including critical illness and death.⁴ They should not routinely be stopped in patients with or at risk of COVID-19, unless there are medical indications to do so, such as hyperkalemia or AKI.

5 Patients receiving dialysis often present atypically with COVID-19

In contrast to the general population, patients receiving renal replacement therapy often present without fever or respiratory symptoms but with fatigue, anorexia and lymphopenia.⁵ A high index of suspicion because of the range of presentations of COVID-19, the use of universal droplet precautions when caring for patients and a low threshold for testing for SARS-CoV-2 are suggested when managing this population.

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