

## **Michigan Medicine Guideline on Renal Replacement Therapy for COVID-19**

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**Guiding Principle:** To provide summary recommendations regarding the management of severe acute kidney injury (AKI) in the setting of COVID-19.

**Note:** There is a paucity of data to suggest that management of AKI (including renal replacement therapy [RRT]) should be different in COVID-19 patients compared to other critically ill patients. One exception is the need for PPE and equipment disinfection as covered in other guidelines.

### **Special Considerations:**

- Incidence increases with severity of overall illness, up to 20-25% in critically ill patients. Development of AKI is associated with increased mortality.
- Primary etiology of severe AKI appears to be ATN related to shock and multi-organ failure. Many patients also develop proteinuria, but it is unclear if there is a distinct COVID-19 kidney injury mechanism.
- There have been reports of viral shedding in the urine. As such, we do not recommend physicians collecting urine specimens for urine microscopy outside of the lab setting.
- Decision for RRT modality (IHD vs. CRRT) is per standard clinical criteria. CRRT is favored as initial modality for patients with hemodynamic instability (e.g. pressors, shock), significant fluid overload, and high catabolism.
- Timing of RRT initiation will depend on clinical factors. One consideration would be earlier initiation with worsening respiratory status if a volume component is suspected. We recommend erring on the side of earlier nephrology consultation to assist in this determination and also to coordinate logistics in a timely manner.
- At this time, there is no evidence to guide specific CRRT or IHD prescription for COVID-19. Prescription follows standard practice for AKI or ESRD, which may vary by institution.
- If CRRT machine availability becomes compromised, alternative schedules (e.g. shift therapy with CRRT for 10-12hrs per day per patient) may become necessary.
- As COVID-19 is a highly inflammatory state, there have been reports of increased premature filter clotting. Factors that may reduce this include the use of citrate anticoagulation (if established protocols exist) and reduction of filtration fraction.
- Most drugs being used/evaluated for COVID-19 (including chloroquine/hydroxychloroquine, tocilizumab, remdesivir) do not require dosing adjustment for renal insufficiency or dialysis.