



Case Description

- A 50 year-old male with a history of hypertension was admitted for shortness of breath 5 days after testing positive for SARS-CoV-2
- Chest x-ray was consistent with Covid pneumonia with superimposed bacterial pneumonia
- Acute treatment received:
 - Hydroxychloroquine 200mg q12h x 5 days
 - Methylprednisolone IV x 5 days
 - Tocilizumab
 - Piperacillin-tazobactam and azithromycin
- Hospital Complications:
 - Acute kidney injury secondary to acute tubular necrosis in the setting of shock (previously normal renal function)
 - Received 1 month of veno-venous hemodialysis (CVVHD), transitioned to hemodialysis (HD) MWF prior to discharge
 - Critical illness myopathy, acute hypoxic respiratory failure requiring intubation for 3 weeks, dysphagia, catheter-associated right internal jugular thrombus, anemia, and thrombocytopenia

Rehabilitation Course

- Transferred to inpatient rehabilitation for critical illness myopathy and severe deconditioning
- Pulmonary function and strength improving swiftly with PT and OT (1 hour each, 5 days a week)
- Required dialysis 3 days per week for 10 total weeks
- Functional improvement was limited by prolonged renal recovery and ongoing need for dialysis
- Upon conclusion of dialysis and improvement in renal function, he was discharged home at the independent level

Discussion

- Little is known about the impact of renal failure on functional recovery in patients recovering from Covid-19
- Up to 15% of all patients with Covid-19 infections develop acute kidney injuries; this percentage is significantly higher in patients admitted to the ICU¹
- Up to 5% of Covid-19 patients admitted to the ICU progress to acute renal failure and require dialysis, and the most common time to develop acute renal failure from Covid-19 is during the second week of infection²
- Dialysis poses a number of health and logistical challenges for patients recovering from functional deficits in the rehabilitation setting
- These challenges include car transfers, sitting tolerance, transportation and scheduling, a need for close monitoring of lab values, nutrition optimization, and identifying centers accepting patients with recent Covid-19 infections

Conclusion

- Understanding multisystem pathology, timeline of recovery, and functional impact of Covid-19 is essential to optimizing patient care in the acute inpatient rehabilitation setting during this pandemic
- Additional data and further studies are needed in this area to improve the ability of rehabilitation teams to optimize resource utilization

References

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Timeline of Clinical Events

