

Peer Review File

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Reviewer A

This is an interesting case series that reported the feasibility of Slow continuous ultrafiltration for COVID-19 patients on ECMO. However, I have a few comments as below:

1. The indications for SCUF should be explicitly stated; how do you judge fluid overload, and did you tried more conservative strategy for this complication?

Reply 1: Indications included patients in positive volume status despite being on loop diuretics and patients with robust urine output causing negative pressure on the ECMO. Conservative strategies like loop diuretics were initially tried but the intake/ output status was always in positive balance given multiple drips, medications including antibiotics and tube feeds. Hence in order to achieve controlled fluid removal SCUF was utilized. We have edited the text as below in the results section.

Changes in text: Slow continuous ultrafiltration (SCUF) was utilized for controlled volume management for both patients in positive volume status despite being on loop diuretics and patients who had robust urine output causing negative pressure on the ECMO.

2. Case 1 had polyuria that it seems fluid control do not require SCUF.

Reply 2: The patient had a robust urine output of about 800cc in 2 hours, causing an increase in negative pressure on the ECMO pump that caused chugging. Hence, he started on slow continuous ultrafiltration (SCUF) for controlled fluid removal. No change in text was made as the above was explained in the text.

3. In the table column "Length of admission to the ICU"---it should be length of stay

Reply 3: Thank you for the comments. We have edited this on the table.

Changes in text: Length of stay in the ICU

4. "Loop diuretics are often used to counter positive fluid balance but Extracorporeal membrane oxygenation (ECMO) is a lifesaving technique in critically ill patients."--this sentence is not logical.

Reply 4: We have edited the statement. We have deleted the "loop diuretics are often used to counter positive fluid balance".

Changes in text: Extracorporeal membrane oxygenation (ECMO) is a lifesaving technique in critically ill patients.

5. Are there any clear indication for CRRT versus SCUF?

Reply 5: CRRT was only initiated if the patient developed anuric kidney injury or had electrolyte derangements. In the literature, there is no clear indication for SCUF in COVID patients.

Reviewer B

1. This is a well-written case series reporting the use of slow continuous UF for COVID-19 patients on ECMO but some minor revisions are needed.

Reply 1: Thank you for your valuable comments.

2. In the results part of the abstract, the authors said 3 of the patients "had better outcomes with reduced length of stay". Is the "better" and "reduced length of stay" in comparison to the other 3 patients? Is this comparison meaningful? The same goes for Page 10 line 174-175.

Reply 2: Three patients had reduced length of stay with shorter duration on SCUF and were discharged from the hospital. Patients who died either developed complications from COVID/ECMO- SCUF or were started on SCUF much longer compared to the other three patients. We have deleted "better outcomes" in the results section and in Page 10.

Changes in text: Out of the six, three patients had reduced length of stay in the ICU, shorter period of SCUF (7-8 days) with no major complications.

3. Page 3 line 47-48 said "volume overload can lead to ARDS". Volume overload is likely not the cause or main contributing factor for ARDS. It might be more accurate to say that volume overload can worsen hypoxia in patients with ARDS.

Reply 3: We have edited the statement

Changes in text: In COVID-19 where the lung tissue is already disturbed by the rapidly expanding inflammatory process, volume overload (pulmonary edema) can worsen hypoxia in patients with acute respiratory distress syndrome (ARDS).

4. Some grammar issues need to be addressed. Page 4 line 76 should be "he was started on redesivir". Page 5 line 85 should be "Hence, he was started on SCUF".

Reply 4: We have edited both the lines.

Changes in text: Hence, he was started on slow continuous ultrafiltration (SCUF), he was started on remdesivir.

5. Was the SCUF circuit connected to the ECMO circuit or separate access were used?

Reply 5: SCUF was through a separate temporary dialysis catheter.

6. For the patients who survived to discharge, renal outcomes should be reported.

Reply 6: The three patients had good renal function with no complications. We have added this statement.

Changes in text: The three patients who got discharged from the hospital had good kidney function and were just discharged on furosemide.