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Title: High-Volume Hemofiltration for Acute Kidney Injury in critically ill patients

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Introduction:

Septic shock and severe sepsis are one of the leading causes of death in the intensive care unit (ICU). It is a systemic infection leading to multi-organ failure and dangerously low blood pressure. As there is a surge in bacterial toxins and inflammatory markers in the bloodstream, removing them from the bloodstream with the help of an extracorporeal blood purification technique like high-volume hemofiltration (HVHF) can be beneficial to critically ill patients in the ICU.

Methods:

A literature search was performed in PubMed/Medline. All the studies were included if there was a need for HVHF either for sepsis or acute kidney injury (AKI) in critically ill patients. Two independent reviewers conducted the selection of articles, and a third resolved any conflicts.

Results:

A total of 809 patients were analyzed (11 studies), the mean (SD) population age was 42.17 ± 13.2 years. Based on nine studies, 47.7 % (386/809) of patients received HVHF as a therapy. 7 of 11 (64%) studies showed significant improvement in patient health; of which 4 (57%) studies showed improvement of clinical symptoms and 3 (43%) studies showed decrease in mortality. However, 4 of 11 (36.4%) studies showed no benefit of receiving HVHF as a treatment.

Conclusion:

This review shows some evidence of benefit in patient's survival; however, there is insufficient evidence available in the literature to recommend the routine use of HVHF in critically ill patients. Further studies need to be conducted to measure clinically relevant outcomes, comparing therapeutic extracorporeal therapies for septic AKI.