

**Harvard Medical School Department of
Continuing Education and the Renal Division
of Brigham and Women's Hospital**



Nephrology Rounds
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Critical Care Nephrology: Acute Renal Failure in the Intensive Care Unit

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Objectives

This issue of *Nephrology Rounds* will help readers to:

- Review the definition and classification of acute renal failure (ARF) in the critical care setting
- Review the mechanisms and characteristics of renal replacement therapies (RRT) that may be used in ARF
- Understand existing data on RRT indications, initiation, modality, dose, and anticoagulation in ARF
- Recognize the potential for high-volume hemofiltration and new urinary biomarkers to change critical care nephrology practice.

Questions:

1. When used for ARF in critically-ill patients, continuous renal replacement therapy (CRRT) leads to improved hospital survival as compared to intermittent hemodialysis (IHD).

True False

2. Due to technological developments in RRT, mortality from ARF in the ICU has decreased from 50% to 25% in the last 30 years.

True False

3. The RIFLE criteria, a new classification system using relative rise in creatinine and absolute level of urine output, has been shown to be predictive of hospital mortality.

True False

4. Slow low-efficiency dialysis is an RRT that combines many of the advantages of IHD and CRRT.

True False

5. There is evidence that higher doses of RRT lead to better outcomes in ARF in the ICU, though a specific dose target has not been defined.

True False

6. Citrate anticoagulation works by increasing available calcium ions, which potentiates antithrombin III.

True False

7. The "peak concentration hypothesis" states that high volume hemofiltration may selectively remove pro-inflammatory mediators to decrease the damaging effects of multiple organs dysfunction syndrome.

True False

8. Urinary biomarkers such as KIM-1 may allow for earlier detection of renal tubule injury and therefore more effective therapy.

True False

9. Because RRT is not benign in critically ill patients, it is generally agreed that RRT for ARF in the ICU should be initiated later than it would be in chronic renal failure.

True False

10. A potential future use for continuous RRT is in multiple organ dysfunction syndrome, with or without ARF.

True False

To receive AMA category 1 credit, you must correctly answer 60% of the test questions.

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