

Different treatments for acute kidney failure appear to often have similar outcomes

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An analysis of studies examining treatments for acute kidney failure indicates that intermittent hemodialysis and continuous kidney replacement therapy appear to lead to similar clinical outcomes, including a similar risk of death, according to an article in the February 20 issue of JAMA.

Acute renal (kidney) failure (ARF) is increasingly common and is associated with high costs and adverse outcomes, including a higher risk of death, increased length of hospital stay and the requirement for chronic dialysis.

A variety of options are currently available for prescribing acute renal replacement (procedures which temporarily or permanently remedy insufficient cleansing of body fluids by the kidneys), including intermittent, continuous, and extended-duration hemodialysis and hemofiltration (similar to hemodialysis, a slow, continuous therapy in which sessions, usually daily, last between 12 to 24 hours), and a combinations of these. “Despite advances in dialysis technology, many questions remain about how best to provide renal replacement to patients with ARF,” the authors write.

Neesh Pannu, M.D., S.M., of the University of Alberta, Edmonton, Canada, and colleagues conducted a review and evaluation of current evidence for the optimal dialytic management of ARF. They searched databases for studies examining dialytic support in adults with acute renal failure that reported the incidence of clinical outcomes such as

mortality, length of hospital stay, need for chronic dialysis, or development of hypotension (abnormally low blood pressure). From 173 retrieved articles, 30 randomized controlled trials (RCTs) and eight prospective cohort studies were eligible for inclusion.

An analysis of the data from the studies indicated that no conclusions could be drawn about optimal indications for or timing of renal replacement. Data comparing continuous renal replacement therapy (CRRT) with intermittent hemodialysis demonstrated no clinically relevant difference in outcomes between methods, including the risk of death, or for the requirement for chronic dialysis treatment in survivors. There was also no evidence that either CRRT or intermittent hemodialysis was superior for reducing resource use or the risk of chronic dialysis dependence in patients with ARF.

Regarding the recommended management strategy for patients with severe ARF, the authors write: “The decision to initiate renal replacement therapy (RRT) in patients with severe ARF requires consideration of multiple factors, including assessment of intravascular volume, electrolyte and acid-base status, uremia [retention in the bloodstream of waste products normally excreted in the urine], nutritional requirements, urine output, hemodynamic status, and the evolving clinical course of each patient. Potential advantages of earlier RRT initiation must be set against the hypothetical risks of treatment-induced renal injury, bleeding due to anticoagulation, and mechanical and infectious complications associated with central venous access.”

“Given the significantly higher cost of CRRT, intermittent hemodialysis may be preferable for patients with ARF who require RRT. In otherwise stable patients, alternate-day dialysis treatments of 4 or more hours using blood flows of 250 mL/min or greater are usually sufficient in patients with or without concomitant critical illness. More frequent hemodialysis may be required in highly catabolic [a destructive metabolic process]

patients or to achieve treatment targets for fluid, electrolyte, or acid-base management, although data identifying how such targets should be set are limited. Despite the lack of data supporting its superiority and its higher cost, some clinicians may prefer to use CRRT in critically ill patients with ARF and severe hemodynamic instability. If CRRT is used, the target dose should be 35 mL/kg per hour [3 L/h in a 154 lb. person],” the researchers write.

Source: JAMA and Archives Journals

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