

## Preoperation Kidney Evaluation

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Acute kidney injury (AKI) is associated with increased morbidity, mortality, duration of hospital stay, and healthcare cost. Despite this, published data on perioperative acute kidney injury, occurring between the time of admission for surgery and the time of discharge, are scarce outside the cardiovascular surgery setting. Regardless of the clinical setting, the diagnosis of AKI is often delayed, and treatment is suboptimal in a large proportion of cases. To improve diagnosis and treatment, clinicians need to understand the risks and triggers for perioperative AKI, the association of even small transient rises in creatinine concentration with risk of death, and what actions they need to take promptly on diagnosis. The term acute kidney injury reflects the importance of thinking of the condition as a spectrum or continuum of disease that may be recognized at an early stage, rather than as an “all or nothing” phenomenon as implied by the term acute renal failure. Recognizing earlier stages of renal impairment allows for early appropriate action that may interrupt a process of functional decline.

Patients with chronic kidney disease often require surgical interventions for vascular access and for medical problems related to comorbid conditions. Perioperative morbidity and mortality rates are increased in these patients. Preoperative attention to common medical problems that occur in patients with impaired renal function can lower some surgical risks. Hyperkalemia can be temporarily improved by the intravenous administration of an insulin dextrose combination or bicarbonate, and polystyrene binding resins or dialysis can remove excess stores of potassium. Increased bleeding related to uremic platelet dysfunction can be managed by the administration of desmopressin, cryoprecipitate, or estrogens, and by avoiding the use of medications with antiplatelet effects close to the time of surgery. Transfusions of red blood cells should be reserved for use in patients with clinically significant anemia, because antibody formation may decrease the likelihood of successful renal transplantation in the future. Cardiovascular disease is the most common cause of death in patients with renal disease. Patients with chronic kidney disease may have hypertension and hypoglycemia in the perioperative period. Preoperative testing may be necessary in patients with cardiac risk factors.