

Acute kidney injury (anuria or oliguria)

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Rationale

Acute kidney injury is an abrupt reduction in kidney function and is defined as an increasing serum creatinine level from baseline over a short period. It is associated with morbidity and mortality.

Causal Conditions

(list not exhaustive)

- Prerenal (functional) causes
 - a. Renal hypoperfusion (e.g., hepatorenal syndrome, angiotensin-converting enzyme inhibitor with bilateral renal artery stenosis)
 - b. Systemic hypoperfusion (e.g., shock, hypovolemia)
- Renal (intrinsic) causes
 - a. Tubulointerstitial (e.g., acute tubular necrosis, interstitial nephritis)
 - b. Glomerular (e.g., glomerulonephritis, thrombotic thrombocytopenic purpura/hemolytic uremic syndrome)
 - c. Vascular (e.g., cholesterol emboli)
- Postrenal (obstructive) causes (e.g., prostatic hypertrophy, extrinsic tumors, calculi)

Key Objectives

Given a patient with acute kidney injury, the candidate will diagnose the cause, severity, and complications and will initiate an appropriate management plan. The candidate must recognize situations in which urgent intervention is required.

Enabling Objectives

Given a patient with acute kidney injury, the candidate will

- list and interpret critical clinical findings, including findings from history and physical examination that are aimed at determining the most likely cause of the acute kidney injury (e.g., medications, volume status);
- list and interpret critical investigations, including

- a. laboratory investigations to determine the underlying cause and severity (e.g., urine specific gravity, urinalysis, serum and urine electrolytes, serum creatinine and potassium); and
- b. renal ultrasonography if indicated; and
- construct an effective initial management plan, including
 - a. assessing the need for urgent intervention (e.g., dialysis, fluid resuscitation, urinary catheterization);
 - b. managing the patient's fluid and dietary intake; and
 - c. determining whether the patient requires specialized care (indications for dialysis).