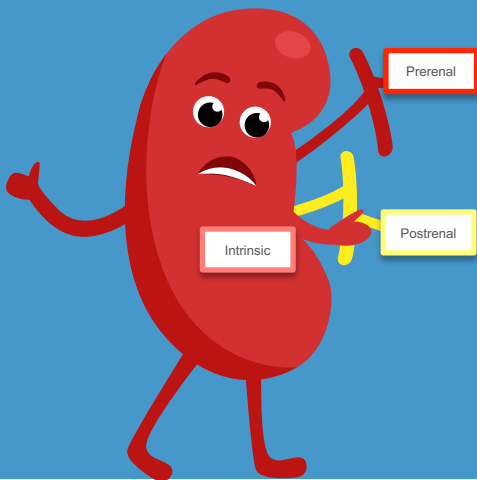


Acute Kidney Injury

Abrupt elevation of creatinine, reduction in urinary output, need for renal replacement therapy, or a combination of these findings.



PRERENAL

- Intrarenal vasoconstriction—hemodynamically mediated
- Systemic vasodilation
- Volume depletion

Diagnosis: History, urinalysis, labs

Management:

- Fluid resuscitation to correct underlying volume deficiency
- Diuretics if heart failure

INTRINSIC

- Glomerular (red blood cells/proteinuria on UA)
- Interstitial (eosinophils/white blood cell casts on UA)
- Tubular (renal tubular cell casts or pigmented casts on UA)
- Vascular

Diagnosis: Renal ultrasonography, urinalysis, renal biopsy

Management: Avoiding nephrotoxic drugs, treating underlying cause

POSTRENAL

- Obstruction to urinary outflow
- Extrarenal: prostate hypertrophy, urinary tract malignancy, retroperitoneal fibrosis
- Intrarenal: stones, crystals, tumors

Diagnosis: Renal ultrasonography

Management: Relief of obstruction (catheterization, percutaneous drainage, or stenting as appropriate)

CLASSIFICATION*

	SERUM CREATININE		URINE OUTPUT
STAGE 1	Increase ≥ 0.3 mg/dL (26.52 $\mu\text{mol/L}$) OR $\geq \times 1.5$ -2 baseline	OR	< 0.5 mL/kg/h for > 6 h
STAGE 2	Increase $> \times 2$ -3 baseline		< 0.5 mL/kg/h for ≥ 12 h
STAGE 3	Increase $\geq \times 3$ baseline OR ≥ 4.0 mg/dL with a rise of > 0.5 mg/dL		< 0.3 mL/kg/h for ≥ 24 h OR anuria for ≥ 12 h OR initiation of renal replacement therapy

INDICATIONS FOR RENAL REPLACEMENT THERAPY

- Refractory hyperkalemia
- Refractory volume overload with anuria/oliguria
- Intractable acidemia
- Uremia (with encephalopathy, pericarditis, or pleuritis)
- Removal of certain toxins (eg, toxic alcohols, lithium, salicylate, valproate)