ACUTE KIDNEY INJURY

	Serum Creatinine	Urine Output Criteria
Stage 1	↑ SCr x 1.5	< 0.5 mL/kg/h x 6 h
	↑ 26 umol/L in SCr over 48h	
Stage 2	↑ SCr x 2	< 0.5 mL/kg/h x 12 h
Stage 3	↑ SCr x 3	< 0.3 mL./kg/h x 24 h
	SCr ≥ 355 umol/L with ↑ 44 umol/L	Anuria x 12 h
Patients who receive RRT are considered to have met stage 3 criteria, irrespective of the stage they are in at the time of RRT		

PRE-RENAL AKI:
fluid depletion

- ↑ SCr & BUN (SCr: BUN < 12)
- ↑ K, Mg, PO4
- Urine Na <20, Uosm > 500
- FENa < 1%, FEUrea < 35%
- Bland sediment, hyaline or granular casts

INTRINSIC RENAL AKI:
Ischemic, septic, direct toxic injury

- Urine Na > 40, Uosm < 300
- FENa > 2%, FEUrea > 35%
- Pigmented granular casts, RTE cells

POST-RENAL AKI:
obstruction

- Urinary sx?
- History of kidney stones or BPH?
- Spinal cord injury?
- Anticholinergic meds?

FLUID MANAGEMENT

- Prompt reversal of volume depletion in IVF to prevent progression to ATN
- Rapid infusion of NS (1 to 3 L)
  - Total volume administered depends on degree of fluid depletion and on-going loss
  - Optimal infusion rate depends on clinical status & comorbidies BUT avoid overly aggressive fluid repletion
- Monitoring: U/O, JVP, MAP, O_2 sat

LOOP DIURETICS

- Indicated for volume control and maintenance of tubular flow
- Theoretically:
  - Reduce energy requirements of cells of ascending limb of Henle → ameloiorate ischemic damage
  - Maintain urine flow, flush out debris, convert to non-oliguric AKI
  - Inhibit PG dehydrogenase to increase RBF
  - Facilitate management of fluid & electrolyte disturbances

INDICATIONS FOR DIALYSIS

- Acidosis (metabolic)
- Electrolyte abnormalities
- Intoxication
- Overload (volume)
- Uremia

- Refractory to medical management
- Prolonged time until adequate recovery of renal fxn to keep pace with metabolic/volume demands

DECOMPRESSION

- Relieve obstruction acutely
  - Foley Catheter: bladder neck (prostate, urethra)
  - Nephrostomy and/or stent: upper tract (ureters)
  - Pharmacotherapy: BPH
  - Urology consult: TURP for BPH
- Post-obstructive diuresis

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