**Decreased Urine Output**

Oliguria: <500 mL/24 hours  
Anuria: <100 mL/24 hours  
Typical cause for concern: <0.5 mL/kg/h or <25-30 mL/hour

**Immediate Questions:**

*Is the patient hypovolemic?*  
GI Bleed, Diarrhea, vomiting common causes  

*Is there a bladder outlet obstruction?*  
BPH, malignancy  

*Is there hematuria?*  
Think of Bilateral kidney stones or malignancy  

*Is Acute Renal Insufficiency present?*  
Hypotension, Meds (Aminoglycosides, NSAIDS), IV Contrast  

*Is there an underlying process?*  
CHF, liver cirrhosis  

*Is Uremia present?*  
Nausea, vomiting, mental status changes  
	→ may need dialysis

**Differential Dx:**  
Prerenal vs. Renal vs. Postrenal

Prerenal: Refers to renal hypoperfusion  
1) Shock/hypovolemia – blood loss, sepsis, loss of fluids (Diarrhea/vomiting)  
2) Relative hypovolemia – 3rd spacing, CHF, cirrhosis, Nephrotic syndrome  
3) Vascular – renal artery stenosis/occlusion, emboli, aortic dissection  

Renal:  
1) Acute tubular necrosis – due to ischemia, toxins (IV contrast, aminoglycosides, ampho B, heavy metals)  
2) Acute interstitial nephritis – Meds (NSAIDS, sulfa, quinolones), hypercalcemia, uric acid  
3) Acute glomerular disease – HTN, DIC, RPGN, systemic autoimmune disease  

Postrenal:  
1) Urethral obstruction – BPH, Foley obstruction, prostate cancer  
2) Bilateral ureteral obstruction – carcinoma or retroperitoneal fibrosis

**Physical Exam:**  
Hypovolemia – orthostatics, hypotension, poor skin turgor/dry mucous membranes  
Hypervolemia (CHF, cirrhosis) – JVD, Lung crackles, distended abdomen/fluid wave  
Sepsis – Fever  
Bladder outlet – Rectal exam for BPH or mass

**Labs:**

**UA:**  
high specific gravity – volume depletion  
RBC casts – glomerular disease  
WBC casts – Infection or inflammation  
Eosinophils – Allergic interstitial nephritis  
Granular casts - ATN  
Hematuria – nephrolithiasis, renal embolization  

Urine Na - <15 – prerenal; FeNA <1 – volume depletion  
BUN/creat > 20 – hypovolemia, GI Blood loss

**Imaging:**  
Ultrasound – reveals obstruction/hydronephrosis  
IVP – not used much  
Retrograde pyelogram – can detect obstruction  
Renal Scan – detects blood flow to kidneys
Practical Approach to Decreased Urine Output

Nursing instructions:
1) Strict I’s and O’s
2) Call for urine output <0.5 cc/kg/hr or 30 cc/hr

Exclude postrenal causes:
1) Place a Foley Catheter
2) Flush Foley Catheter if already in place
3) Consider percutaneous nephrostomy (not done often)

Give Volume:
1) NS bolus of 300-500cc over 30 minutes (be careful in CHF)
2) If suspect Blood loss (GIB) then check H/H, consider blood products
3) Consider starting IV NS 75-150 cc/hr (Careful in CHF)

Diuretics:
1) Lasix 40 mg IVP, if no result then escalate to additional 80mg IVP if no response in 1-2 hours
2) Mannitol 12.5-25 g IV for osmotic diuresis

Consider renal causes:
1) Emergent dialysis can be considered in severe volume overload not responding to diuretics, severe hyperkalemia, severe uremic symptoms. Emergent Dialysis does not happen often, and it mostly occurs in the ICU.