

Nephrology

Hyperkalemia	
Workup	Chem 10 (ensure not hemolyzed -- free-flowing sample, order STAT), blood gas to assess acid/base status, EKG, TTKG (see above) -- low TTKG (<7) in setting of hyperkalemia may indicate ald deficiency or resistance, plasma renin and aldosterone.
Management	<p>If real and w/ EKG changes STOP K+ supplementation, K+-containing IVF, and K+-sparing medications Stabilize cardiac membrane: calcium gluconate 10% @ 0.5 mL/kg (=100 mg/kg) IV over 5 calcium chloride 20 mg/kg IV over 5-10 min if impending cardiac arrest Drive K+ into cells insulin 0.1 U/kg, max 10U IV with glucose: <5 yo: D10 (100 mg/mL) @ 5 mL/kg // ≥5 yo: D25 (250 mg/mL) @ 2-4 mL/kg IV (max 25g), infuse over 30 min albuterol nebs: neonates 0.4 mg in 2 mL NS // < 25 kg, 2.5 mg in 2 mL NS // 25-50 kg: 5 mg in 2 mL NS // >50 kg: 10 mg in 2-4 mL NS or 4-8 MDI puffs bicarb: 1 mEq/kg IV (max 50 mEq) over 10-15 min (< 6 mo: 2 mL/kg of 4.2% NaHCO3 // ≥ 6 mo: 1 mL/kg of 8.4% NaHCO3) intubate + hyperventilate (induce alkalosis) Excrete total body K+ Kayexalate (1 g/kg, max 50g PO/PR q4h PRN) Furosemide 1-2 mg/kg IV (max 40 mg or 80 mg if renal insufficiency) q6h PRN Dialysis if emergent or if ongoing source of K+ release (tumor lysis, rhabdo)</p>

Hematuria	
Definition	Red blood cells in the urine
Etiology	<ul style="list-style-type: none"> • Extra-glomerular: UTI, ureteral trauma, nephrolithiasis, cystitis (any UTI, adenovirus, cyclophosphamide), sickle cell disease or trait, malignancy (bladder CA, Wilms tumor) • Intra-glomerular: glomerulonephritis (see GN section), benign familial hematuria / thin basement membrane disease
Workup	<ul style="list-style-type: none"> • UA (+blood on dip AND +RBCs on micro?) • If only +blood, think myoglobin vs hemoglobin • If red but neg blood/neg RBC, think beets, rifampin, nitrofurantoin, doxorubicin, chloroquine • If cola- or tea-colored urine, RBC casts, marked proteinuria, or dysmorphic RBCs, think GN • If blood clots, uniform RBCs, urethral bleeding, think extra-gl.) • If h/o trauma, do CTAP • If s/sx UTI, do Ucx • If s/sx nephrolithiasis, do renal US +/- CTAP • If c/f GN, send chem 10, CBC/d/retic, C3/C4, albumin, ASLO, anti-DNase B, ANA, urine protein:Cr ratio; consider renal bx if concomitant proteinuria/HTN and/or rising serum creatinine

Proteinuria	
Definition	<ul style="list-style-type: none"> • Excessive excretion of urinary protein • Dipstick: estimates as follows: trace = 15-30 mg/dL / 1+ = 30-100 mg/dL / 2+ = 100-300 mg/dL / 3+ = 300-1000 mg/dL / 4+ = >1000 mg/dL • Primarily detects albumin • Quantitative (perform if dip pos): spot urine prot/Cr (nl <0.2 mg if age 2+, <0.5 if <2 yo; 3-3.5 mg/mg = nephrotic) / 24h: >100 mg/m2 per day is abnormal, >1000 mg/m2 per day is nephrotic