HEMATURIA and NEPHROLITHIASIS

Lecture Outline

1. Overview of hematuria
   a. Gross hematuria
   b. Microscopic hematuria

2. Detection of hematuria
   a. Dipstick testing for heme
   b. Microscopic detection for RBCs

3. Causes of microscopic hematuria
   a. Glomerular
      i. Glomerulonephritis
         1. IGA and others
   b. Non-glomerular
      i. Upper GU tract
      ii. Lower GU tract

4. Urologic cancer
   a. Incidence
   b. Risk factors
   c. Evaluation of upper tract
   d. Evaluation of lower tract

5. Nephrolithiasis
   a. Epidemiology
   b. Clinical presentation
   c. Stone composition

6. Nephrolithiasis pathophysiology
   a. Increased solute
   b. Decreased inhibitors
   c. Increased promoters

7. Calcium oxalate stones
   a. Common medical causes

8. Calcium phosphate stones

9. Struvite stones

10. Uric acid stones

11. Cystine stones

12. Evaluation of stones
    a. History and physical
    b. Imaging
    c. 24 hour urine
    d. Stone analysis
    e. Blood chemistry
13. Active stone management
   a. Pain medications
   b. Fluids
   c. Tamsulosin
   d. Indications for medical vs interventional management
      i. Medical management
      ii. Interventional management

14. Future stone prevention
   a. For all stones: increase fluid intake
   b. Specific stone management strategies

15. Dietary review
   a. Foods rich in calcium
   b. Foods rich on oxalate
   c. Low sodium diet