URINARY TRACT INFECTIONS

LOWER URINARY TRACT

Acute Cystitis
Symptoms: Bladder irritation, dysuria, hematuria. No fever.
Essentially a female disease with two adult peaks:
- Onset of sexual activity
- Menopause
E. Coli most common organism under age 50
C&S not necessary in most young females
Antibiotics:
- Quinolones 99% effective with 3 day course
- Sulfa-trimethoprim. 10-20% of E.Coli now resistant.
- Nitrofurantoin 99% effective but requires 7 day course
Prophylaxis:
- Single dose antibiotic post coitus
- Chronic low dose antibiotic- nitrofurantoin, sulfa-trimethoprim

Chronic Cystitis
Occurs in males and females
Always necessary to rule out malignancy by cystoscopy/cytology
Bacterial: Often complicated- stones, obstruction, retention, etc.
- Require evaluation of upper tracts as well as bladder
Radiation
Cyclophosphamide
Fungal

Interstitial Cystitis
90% female
“PUF” syndrome: Pain-Urgency-Frequency
Two forms of disease:
- Ulcerative- 10%, most severe form, progressive
- Non-ulcerative- 90%, less progressive
Pathophysiology: Epithelial permeability due to loss of protective GAG layer
- Diffusion of toxic solutes into bladder wall, esp. K+
- Heightened nerve sensitivity (sensory “PUF”)
- Mast cell activation and degranulation
- Inflammation, muscle damage, scarring
Diagnosis: History
- Bladder capacity <300ml with patient awake
- Cystoscopy under anesthesia: ulcers, development petechial hemorrhages (glomerulatioins) with overdistension
Non-invasive treatment:
- Correct epithelial permeability- Elmiron restores GAG layer over time
- Inhibit neural activity- tricyclic antidepressants
- Stabilize mast cells- antihistamines (hydroxyzine)
- OAB symptoms- anticholinergics (oxybutynin, tolteridine)
- Diet
- Pain management- up to and including narcotics
UTI  

Invasive treatment

- Cystoscopy with hydrodilation under anesthesia
- Laser ablation of ulcers
- Topical heparin
- Topical DMSO
- Interstim?
- Surgery- only as a last resort!
  - Bladder augmentation
  - Cystectomy

UPPER URINARY TRACT

**Acute Pyelonephritis**

- Symptoms: Chills, fever, renal pain + bladder sx
- Uncomplicated vs. complicated (associated stone or obstruction)
- Upper tract imaging advisable
- Urine culture always necessary in order to insure Rx appropriate
- Particularly common and dangerous during pregnancy
- Common in diabetics
- Complications: Septicemia
  - Renal or perirenal abcess

**Chronic Pyelonephritis**

- Symptoms: Often none
  - Chronic pain
  - Chronic bladder symptoms
  - Recurrent acute episodes
- Usually complicated, especially associated with stone disease
- Rx required for infection and underlying problem