

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 (glomerulations) 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

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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 abscess

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