

Acute Prostatitis

Background

1. Definition
 - Acute painful infection/ inflammation localized to prostate gland with duration of less than 3 months
2. Prostatitis classification - 4 classes
 - Acute bacterial prostatitis
 - Chronic bacterial prostatitis
 - Chronic prostatitis / Chronic pelvic pain syndrome (inflammatory and non inflammatory)
 - Asymptomatic inflammatory prostatitis¹
3. General information
 - Least common of the 4 classes of prostatitis¹
 - Bacterial prostatitis (chronic and acute) constitute less than 10% of all cases of prostatitis¹
 - Probably variant form of UTI with reflux of germs into prostatic tissue
 - Cost nationally for evaluation and diagnosis of prostatitis estimated at \$84 million²

Pathophysiology

1. Pathology of disease
 - Bacterial invasion of prostate
 - Aerobic gram negative common
 - E. coli in 60-80% of infections
 - C. trachomatis has been shown to be confirmed causes of prostatitis and prostatic abscess³
 - Pseudomonas, klebsiella, proteus are less common gram negative bacterial sources¹
 - Gram positive
 - Enterococci 5-10%
 - Proposed mechanisms of infection
 - Reflux of infected urine into prostatic tissue through the prostatic and ejaculatory ducts
 - Ascending urethral infection from urethral meatus occurring most often during sexual intercourse¹
2. Incidence, prevalence
 - Exact incidence and prevalence not completely known due to lack of definitive diagnostic test and clinician variance
 - By age 79, 10-30% of men will have had a diagnosis of prostatitis (acute or chronic)
 - Estimated 2 million annual visits for all subtypes of prostatitis (acute or chronic)⁴
 - Most common urologic diagnosis for males aged 50 or younger and 3rd most common for males aged 50 or greater⁴
 - Affects men of all ages and frequently is diagnosed in conjunction with benign prostatic hypertrophy⁵

- Prostatitis diagnosis (all classes) made approximately 2-2.5 times more in patients aged 36-50 yo and 51-66 yo than in men aged >66 yo⁴
- Diagnosis not related to race⁴
- 3. Risk factors
 - Trauma, dehydration, sexual abstinence, indwelling catheter, intermittent catheter, anatomic anomaly
- 4. Morbidity / mortality
 - Bacteremia/ sepsis, Epididymitis, Chronic bacterial prostatitis, prostatic abscess

Diagnosis

1. History
 - Spiking fevers, chills, malaise, myalgia, dysuria, rectal pain, pelvic pain, cloudy urine, dribbling, hesitancy, urinary retention, prostatitis history
2. Physical exam
 - Fever
 - Edematous, tender, warm prostate on rectal exam
 - Prostatic massage and vigorous digital rectal examination is contraindicated as it may induce bacteremia (SOR:C)
 - Pre and post massage test (PPMT) as well as Stanley Meares Four Glass test used to help diagnose chronic bacterial prostatitis are both contraindicated in acute bacterial prostatitis (SOR:C)¹
3. Diagnostic testing
 - Urinalysis and urine culture
 - Pyuria, hematuria, bacteriuria, cloudy, malodorous
 - On urine culture
 - Positive growth is >100,000 colony forming units (CFU) of species of bacteria
 - Negative result is no bacterial growth¹
 - Gram stain (to initiate therapy) and culture of urine
 - CBC
 - May show leukocytosis with left shift
 - Blood culture
 - If bacteremia suspected
 - PSA may be elevated for 4-6 weeks after infection
 - No definitive one diagnostic test (SOR:C)¹

Differential Diagnosis

1. Cystitis
2. Urethritis
3. Pyelonephritis
4. Malignancy
5. Urolithiasis
6. Foreign body
7. Acute urinary retention
8. Trauma

Therapeutics

1. Antibiotics
 - Most common bacteria involved include E. coli, klebsiella, proteus and pseudomonas¹
 - Oral therapy - 1st line, usually given for 4-6 weeks
 - TMP-SMX or cotrimoxazole (1 double strength tablet q12hr) or fluoroquinolone (ciprofloxacin 500 mg q12hr)¹
 - Ampicillin 500 mg q6hr or amoxicillin 500 mg q8hr for enterococci¹
 - Cephalexin 500 mg q6hr or dicloxacillin 500 mg q6hr for Staph. or Strep (SOR:C)¹
 - Consider doxycycline if Chlamydia suspected (SOR:C)¹
 - Parenteral therapy: given if unable to tolerate oral antibiotics or if patient appears systemically ill and may require hospitalization
 - Ceftriaxone IV with aminoglycoside
 - Cefuroxime IV with aminoglycoside
 - Cefotaxime IV with aminoglycoside
 - Patient to be switched to oral antibiotics if responding well, prescribed for at least 4 weeks (SOR:C)⁵
2. Alpha-adrenoreceptor blockers
 - Use in case of urinary retention
 - If residual volume is less than 100 mL, add alpha adrenoreceptor blocker, if greater than 100 mL, will need to consider catheterization (SOR:C)⁵
3. NSAIDs for pain and inflammation
4. Antipyretics, stool softeners, hydration as needed for comfort
5. Transurethral catheterization or instrumentation contraindicated - obtain urology consult if catheter needed - usually done suprapubically

Follow-Up

1. Return to office
 - In <7 days if symptoms worsen despite therapy
 - In 7 days
 - Repeat urinalysis and culture
 - If culture remains positive, change antibiotic therapy
2. Refer to specialist if
 - No response to treatment
 - Consider hospitalization
 - Suspect abscess - transrectal ultrasonography, CT scan or MRI useful in diagnosis of prostatic abscess¹
 - Complications suspected
3. Admit to hospital if
 - Unable to tolerate PO intake
 - Signs of toxicity/sepsis
 - Hypotension
 - Altered mental status
 - Tachycardia
 - Dehydration

Prognosis

1. Curable condition
2. Recurrence, prostatic abscesses, and chronic prostatitis can develop

Prevention

1. Chronic suppressive antibiotic therapy for recurrent infections may be helpful

Patient Education

1. <http://familydoctor.org/online/famdocen/home/men/prostate/581.html>
2. <http://www.mayoclinic.com/health/prostatitis/ds00341>

References

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