



Clinical

Prostatitis
Diagnosis and treatment

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Gregory Dickson

Prostatitis is a spectrum of disorders that impacts a significant number of men. Acute bacterial prostatitis may be a life-threatening event requiring prompt recognition and treatment with antibiotic therapy.

Up to 8% of Australian men report having urogenital pain at any given time, with 15% of men suffering from symptoms of prostatitis at some point during their lives. In addition to causing impaired quality of life, men who have a history of prostatitis have increased rates of benign prostatic hyperplasia, lower urinary tract symptoms and prostate cancer.

- acute bacterial prostatitis
chronic bacterial prostatitis
chronic prostatitis/chronic pelvic pain syndrome
inflammatory subtype
non-inflammatory subtype
asymptomatic inflammatory prostatitis

Acute bacterial prostatitis

Acute bacterial prostatitis (ABP) accounts for approximately 5% of cases of prostatitis cases. Although rare, ABP requires prompt recognition and treatment as it may result in sepsis. Acute bacterial prostatitis results from proliferation of bacteria within the prostate gland following intraprostatic reflux of urine infected with organisms such as Escherichia coli, Enterococcus and Proteus species.

The clinical presentation of ABP may be highly variable with symptoms ranging from mild to severe. Classic symptoms include:

- fever
chills
perineal or lower abdominal pain
dysuria
urinary frequency
urinary urgency
painful ejaculation
hematospermia

Acute bacterial prostatitis should be considered in the differential diagnosis of any male presenting with urinary tract symptoms. While gentle palpation of the prostate gland on physical examination will often reveal a pathognomonic finding of an exquisitely tender, boggy prostate gland, care should be taken to avoid vigorous prostate massage as this may precipitate bacteraemia and sepsis.

Acute bacterial prostatitis can be diagnosed clinically, although both urine Gram stain and urine culture are recommended to identify causative organisms and guide treatment. While blood cultures and C-reactive protein may prove useful, a prostate specific antigen (PSA) test is not indicated.

Antibiotic therapy for ABP should be based on the ability of the patient and the known or suspected causative organism. Table 1 outlines the Australian Therapeutic Guidelines current treatment recommendations. While ABP is usually caused by urinary pathogens, sexually transmissible infections such as chlamydia and gonorrhoea should be considered, particularly in young men.

In addition to antibiotic therapy, non-steroidal anti-inflammatory drugs (NSAIDs) may offer both analgesia and more rapid healing through liquefaction of prostatic secretions.

Urine culture 48 hours post-treatment is useful combined with review after 7 days of antibiotic treatment to assess clinical response to treatment.

If the patient fails to improve with antibiotics, a prostatic abscess should be suspected, particularly in men who are immunocompromised, have diabetes mellitus or who have had recent instrumentation of the urinary tract. Both computed tomography (CT) and transrectal ultrasound may be used to detect a prostatic abscess. If perineal puncture of the abscess is planned, ultrasound may guide the procedure. However, if surgical debridement of the abscess is planned, a CT scan may be more helpful to define borders of the abscess, plan the surgical approach and to investigate for other abnormalities in the genitourinary system.

Acute urinary retention may develop as a complication of ABP. Suprapubic tap should be performed to alleviate retention as urethral catheterisation may worsen infection and is contraindicated. In addition to acute urinary retention and prostatic abscess, ABP can lead to sepsis, chronic bacterial prostatitis, fistula formation or spread of infection to the spine or sacrocaudal joints.

Chronic bacterial prostatitis

Chronic bacterial prostatitis (CBP) may result from ascending urethral infection, lymphogenous spread of rectal bacteria, haematogenous spread of bacteria from a remote source, undertreated acute bacterial prostatitis or recurrent urinary tract infection with prostatic reflux. Causative agents of CBP include Gram negative rods, fungi, mycobacterium, Ureaplasma urealyticum, Chlamydia trachomatis and Trichomonas vaginalis. However, Escherichia coli is believed to be the causative organism in 75–80% of CBP cases.

Recognising CBP can be difficult, as the history and examination are highly variable. All patients note some degree of genitourinary pain or discomfort. Common presentations include recurrent urinary tract infections with no history of bladder instrumentation, dysuria and frequency with no other signs of ABP or new onset sexual dysfunction without other aetiology.

Often the physical examination, including prostate examination, is normal. Prostate examination should be performed to document any abnormalities such as prostatic calculi, which can serve as a reservoir of infection. Prostatic stones may be difficult to palpate, but if found, may impact management decisions.

Although the Meares-Stamey four glass test is the gold standard to diagnose CBP, it is rarely used in practice due to time constraints and the difficulty obtaining samples. Instead pre- and post-prostatic massage urine samples for analysis and culture may be useful and can guide antibiotic therapy. A prostatic massage is performed by stroking the prostate with firm pressure from the perineum to the midline on both the right and left sides of the prostate gland. More than 20 leucocytes per high powered field on the post-massage urine sample is diagnostic of CBP. If urines cultures show no growth, consider a nucleic acid test for C. trachomatis and culture of prostatic fluid for ureaplasmas. Occasionally, Mycoplasma genitalium is found in prostatic secretions, although its role in prostatitis is unclear. If these tests are also negative, an alternative diagnosis should be considered.

Limited comparative trials exist to guide antibiotic regimens for CBP. Table 1 lists current recommendations. Patients should be warned about the common side effects of extended duration of antibiotic use, such as Achilles tendon rupture with fluoroquinolones.

In addition to antibiotics, NSAIDs may alleviate pain symptoms. Alpha-blockers may diminish urinary obstruction and reduce future occurrences. Although less well studied, saw palmetto, quercetin, daily sitz baths, perineal massage and frequent ejaculation may also help to clear prostatic secretions and lessen discomfort. If prostatic stones are present, prostatectomy may eliminate the nidus of infection.

Table 1. Treatment of acute and chronic bacterial prostatitis. Table with columns for Acute bacterial prostatitis, Chronic bacterial prostatitis and treatment protocols including antibiotic regimens and first line treatments.

Chronic prostatitis/chronic pelvic pain syndrome

Chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS) is more common than either acute bacterial or chronic bacterial prostatitis. Up to 18% of Australian men may experience some type of urogenital pain within a 12 month period, while up to 2% of Australian men may have prostatitis-like symptoms at any given time.

Symptoms of CP/CPPS can vary widely and include dysuria; urinary frequency; urinary urgency; weak urinary stream; pain in the perineum, lower abdomen, testicles or penis; hematospermia or difficulty achieving erection. Diagnosis requires the patient to have had pelvic pain or urinary symptoms for more than three of the previous 6 months with no evidence of ABP or urinary tract infection in that time.

Chronic prostatitis/chronic pelvic pain syndrome is a diagnosis of exclusion and laboratory or imaging studies are indicated to rule out other potential causes of symptoms. Elevated PSA should not be attributed to CP/CPPS and warrants further investigation.

Approximately 60% of men affected by CP/CPPS will seek treatment for their symptoms. Although various treatments have been studied, methodological problems including lack of randomisation and small sample size limit the ability to apply research findings to the clinical treatment of CP/CPPS. With the current evidence available, tailoring treatment to individual patient symptom complexes may be more beneficial than attempting to use one treatment as a curative agent in all individuals.

Of the treatments that have been studied, alpha-adrenergic receptor blockers and antibiotics used alone or in combination appear to have the greatest improvement in symptom scores when compared with placebo. Anti-inflammatory medications may also be useful.

Additional studies are needed to determine the role of 5 alpha-reductase inhibitors, glycosaminoglycans, saw palmetto, acupuncture, physical therapy, and pelvic floor training using biofeedback as part of treatment.

Other treatments that have proven useful in small studies for targeted symptoms include: phosphodiesterase five inhibitors for sexual dysfunction, cernilton or pollen extract for urinary symptoms, quercetin (500 mg orally twice daily for 30 days) for pelvic floor muscle spasm, and fluoxetine (20 mg orally daily) for depression and improved quality of life.

Asymptomatic inflammatory prostatitis

Asymptomatic inflammatory prostatitis is, by definition, asymptomatic. It is often diagnosed incidentally during the evaluation of infertility or prostate cancer. The clinical significance of category IV prostatitis is unknown, and is often left untreated.

Summary

A diagnosis of prostatitis encompasses a spectrum of disease: acute bacterial prostatitis, chronic bacterial prostatitis, chronic prostatitis/chronic pelvic pain syndrome and asymptomatic prostatitis have varying clinical significance, causative agents, treatment strategies and long-term prognosis.

Limited research exists to guide the diagnosis and management of these entities, making prostatitis a challenging condition to manage.

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References

List of 40 references including: Ferris JA, Pitts MK, Richters J, Simpson JM, Shelley HM, Smith AM. National prevalences of urogenital pain and prostatitis-like symptoms in Australian men using the National Institutes of Health Chronic Prostatitis Symptoms Index.

Correspondence afp@racgp.org.au

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