

Virtual Mentor

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Clinical pearl

Prostatitis: prevalence, classification and treatment

by Sarah Maitre

Prostatitis is an inflammatory condition that is not well understood. It has multiple etiologies, both infectious and noninfectious, which have been and continue to be the subject of much investigation. Due to the complex, multifactorial origin of this condition and the variety of presenting symptoms, its precise prevalence in the U.S. is uncertain, but has been estimated at 9 percent [1]. A 2002 epidemiology review found the prevalence of prostatitis-like symptoms ranged from as low as 3 percent to as high as 16 percent, depending on the definition used by the evaluating physician [2]. Of note, African American males suffer disproportionately from prostate disease. The incidence of prostate cancer, a potential etiology for prostatitis, is 274.3 per 100,000 African American men, while white men have an incidence of 171.2 per 100,000. For African American men under the age of 65, the incidence of prostate cancer is double that of whites. Mortality statistics are even worse: between 1997 and 2001 the death rate from prostate cancer for African American males was three times that for whites [3]. The exact reasons are not known, but contributing factors may include genetics, morbidity from other disease states, socioeconomic status and access to health care.

Classification of prostatitis

Due to the numerous processes and symptoms that define and accompany prostatitis, determining a classification system that adequately and usefully describes this disease state has been challenging. Under the traditional classification system, symptomatic patients were placed into four categories: (1) acute bacterial prostatitis (acute urinary tract infection (UTI)), (2) chronic bacterial prostatitis (recurrent UTIs caused by the same uropathogen), (3) nonbacterial prostatitis (lower GU tract symptoms with prostatic inflammation), and (4) prostatodynia (lower GU tract symptoms without prostatic inflammation) [4]. Established in 1978, this method of classification, with its emphasis on the presence of bacteria in the urine, resulted in a rational diagnosis and treatment for patients with acute or chronic bacterial prostatitis, and, in turn, led to the development of specific criteria for clinical trials, which further improved treatment outcomes and advanced the medical profession's understanding of these conditions. It did little, however, to shed light on the etiology of nonbacterial prostatitis or prostatodynia which constitute 90 percent of all prostatitis cases [5]. As a result treatment options for these conditions have changed little over the years. A study at the University of Washington found that only seven

percent of patients evaluated for chronic symptoms at their prostatitis clinic were diagnosed with bacterial prostatitis [4].

Diagnosis

In 1995 the National Institutes of Health convened a consensus conference to re-evaluate the utility of the existing classification system. The result was a refinement of the traditional classification of prostatitis syndromes that allowed for standard inclusion criteria for participants in clinical trials for chronic nonbacterial prostatitis and prostatic pain [6]. The new system also has four categories. Category I, acute bacterial prostatitis, refers to a combination of lower urinary tract and systemic infectious symptoms such as fever and chills.

Category II, chronic bacterial prostatitis, is characterized by culture-documented recurrent urinary tract infection combined with symptoms of acute or chronic pelvic pain without the systemic component demonstrated in category I.

Category III, known as chronic prostatitis (CP) or chronic pelvic pain syndrome (CPPS), lacks an infectious component and is subcategorized as inflammatory or noninflammatory based on the findings of leukocytes in a urine sample and expressed prostatic secretions. Symptoms, however, can be similar to those found in categories I and II and include perineal or low back pain, lower urinary tract symptoms and painful ejaculation. The existence of pelvic pain is a requirement for diagnosis of category III prostatitis regardless of the level of urinary symptoms [7]. Due to the differences in presenting symptoms among patients, the National Institutes of Health-Chronic Prostatitis Symptoms Index (NIH-CPSI) was created to quantify and determine the effects of the presenting symptoms for category III patients. The NIH-CPSI asks questions that are tabulated into three domain scores: (1) pain, (2) urinary symptoms and (3) quality of life. The index can be helpful in differentiating the levels of CP-CPPS while also quantifying an individual's quality of life. A limitation of the index is that it was validated by a population of mostly white, educated men and may not be as useful in other patient populations.

Finally, category IV refers to asymptomatic inflammatory prostatitis. It is usually found incidentally through biopsies of patients being evaluated for benign prostatic hypertrophy (BPH) or an elevated prostate-specific antigen (PSA). It has been estimated that category IV prostatitis may affect one-third of all patients who present with prostatitis [8].

Treatment

Given the varying and complex etiology of prostatitis, it is not surprising that treatment options differ by category. The recommended treatment for acute bacterial prostatitis—category I—in the setting of systemic symptoms, is intravenous (IV) antimicrobials in concert with supportive measures such as IV hydration and catheter drainage if the patient cannot void. The causal agents are *Escherichia coli*, *Klebsiella spp*, *Pseudomonas aeruginosa*, *Enterobacter spp* and *Serratia marcescens*. The

antimicrobials of choice are an aminoglycoside and beta-lactam combination or a fluoroquinolone with two to three weeks of outpatient treatment.

The most common pathogen in chronic bacterial prostatitis, category II, is *E. coli* (80 percent). *Klebsiella spp*, *Pseudomonas aeruginosa*, and *Proteus spp* have also been isolated. Treatment involves a 4-to 8-week course of a prostate-penetrating antimicrobial like a fluoroquinolone. In about one-third of these patients symptoms return, and they may require long-term, low-dose antimicrobial prophylaxis or radical transurethral prostatic resection to remove infected tissue.

There are no U.S. guidelines for treatment of category III CP-CPPS. British guidelines state that “The lack of knowledge of the etiology of these conditions means that no specific recommendations can be made and treatment of choice is usually trial and error” [6]. Although this condition is considered nonbacterial, there is some evidence that bacteria may exist at counts too low to be detected. A single 4-to 6-week course of antimicrobial therapy may be beneficial. In addition, alpha-blockers, such as terazosin, may relieve some symptoms and improve quality of life. The debate regarding the use of nonsteroidal anti-inflammatory medication is ongoing, and thus far results are not promising. Allopurinol, biofeedback and pelvic floor training may be helpful for some patients [6, 7].

Category IV prostatitis requires follow-up for its underlying etiology (i.e., BPH or elevated PSA). Since it is asymptomatic, there are no treatment recommendations, though it has been found that chronic inflammation of the prostate can lead to elevated PSA. Treatment with antimicrobials and anti-inflammatory medications can help to lower PSA.

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