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## Review

# Comprehensive overview of prostatitis



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## ABSTRACT

Prostatitis is a common urinary tract syndrome that many doctors find problematic to treat effectively. It is the third most commonly found urinary tract disease in men after prostate cancer and Benign Prostate Hyperplasia (BPH). Prostatitis may account for 25% of all office visits made to the urological clinics complaining about the genital and urinary systems all over the world. In the present study, we classified prostatitis and comprehensively elaborated the etiology, pathogenesis, diagnosis, and treatment of acute bacterial prostatitis (category I), chronic bacterial prostatitis (category II), chronic pelvic pain syndrome (CPPS) (category III), and asymptomatic prostatitis (category IV). In addition, we also tried to get some insights about other types of prostatitis-like fungal, viral and gonococcal prostatitis. The aim of this review is to present the detail current perspective of prostatitis in a single review. To the best of our knowledge currently, there is not a single comprehensive review, which can completely elaborate this important topic in an effective way. Furthermore, this review will provide a solid platform to conduct future studies on different aspects such as risk factors, mechanism of pathogenesis, proper diagnosis, and rational treatment plans for fungal, viral, and gonococcal prostatitis.

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**1. Introduction**

Prostatitis is a common urinary tract condition that many doctors find problematic to treat effectively. It is estimated that nearly half of all men suffer from symptoms of prostatitis at some stage in their lives [1]. It is the 3rd most commonly found urinary tract disease in men after Benign Prostate Hyperplasia (BPH) and prostate cancer [2,3]. Prostatitis may account for 25% of all office visits made to the urological clinics complaining about the genital and urinary systems all over the world and up to 15–25% of visits to the clinics of urology in Korea [4]. Contrasting to prostate cancer and Benign Prostate Hyperplasia (BPH), which are predominantly diseases of elder men, prostatitis affects men of all ages, especially high impact on the middle age group. In Canada, almost 9% of men experience some symptoms of prostatitis over the course of a year, out of which, 6% symptoms are problematic [5]. In more recent studies, it has shown that the occurrence of prostatitis ranges from 3 to 16% in Europe, North America and Asia [2,6–8], of which half have repeated episodes [9] highlighting that prostatitis is an important universal health problem.

**2. Classification of prostatitis**

Recently, the National Institutes of Health (NIH) has classified prostatitis into new categories. According to this classification,

acute and chronic bacterial prostatitis remains the same. There is a formation of a new group called chronic nonbacterial prostatitis/ chronic pelvic pain syndrome (CNP/CPPS). This new group is a combination of chronic nonbacterial prostatitis and prostatic prostatic prostatic. The fourth and final category is the asymptomatic prostatitis.

The NIH classification of prostatitis consists of (Table 1) [10]

*Category I:* also called acute bacterial prostatitis (ABP); this kind of prostatitis is characterized by severe symptoms of prostate and systemic infection. There is the presence of bacteria in this kind of prostatitis, which leads to acute bacterial urinary tract infection (UTI).

*Category II:* also called chronic bacterial prostatitis (CBP); in this case, prostate inflammation is induced by chronic bacterial infection with or without the symptoms of prostatitis. Patients with category II prostatitis usually suffer from recurrent UTIs produced by the same strain of bacteria.

*Category III:* also called chronic prostatitis/chronic pelvic pain syndrome; Presence of chronic pelvic pain symptoms and possibly voiding symptoms in the absence of urogenital infections is the unique characteristic of this prostatitis.

*Category IV:* also called asymptomatic inflammatory prostatitis (AIP); in this type of prostatitis, there is an inflammation of the prostate but there are no symptoms of genital urinary tract infections.

Fig. 1 provides a flow chart of prostatitis.

**Table 1**  
NIH classification of prostatitis. [10]

| NIH Consensus           | Clinical descriptor                   | Clinical details  |
|-------------------------|---------------------------------------|---|
| Type I (Category I)     | Acute bacterial Prostatitis           | Severe symptoms of prostatitis, symptoms of systemic infection and acute bacterial urinary tract infection with bacteriuria and pyuria                        |
| Type II (Category II)   | Chronic bacterial Prostatitis         | Chronic bacterial infection of the prostate gland with or without symptoms of prostatitis, usually with recurrent UTI's caused by the same bacteria           |
| Type III (Category III) | Inflammatory <sup>a</sup> (CP/CPPS)   | Characterized by chronic pelvic pain and possibly voiding symptoms with no bacterial infection; leucocytes present in expressed prostatic secretions or semen |
| Type IV (Category IV)   | Asymptomatic Inflammatory prostatitis | Evidence of inflammation without symptoms of prostatitis or UTI   |

<sup>a</sup>WBC semen > 106/ml, WBC EPS > 5 p hpf, WBC VB3 > 10 p hpf

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