



## **CHRONIC PROSTATITIS: ETIOLOGY AND TREATMENT**

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**Abstract:** Chronic prostatitis is a persistent inflammatory or pain-related disorder involving the prostate gland and surrounding pelvic structures. It includes chronic bacterial prostatitis and chronic pelvic pain syndrome. The condition affects urinary function, pelvic comfort, and quality of life. Its etiology is multifactorial, involving infectious, immunological, neuromuscular, and psychological components. Effective management requires targeted and often combined therapeutic approaches.

### Introduction

Chronic prostatitis is defined as pelvic, perineal, or prostate-related pain lasting at least three months, often accompanied by urinary symptoms or sexual dysfunction. The National Institutes of Health (NIH) divides prostatitis into four categories. Chronic prostatitis includes NIH Category II (chronic bacterial prostatitis) and NIH Category III (chronic pelvic pain syndrome, which is subdivided into inflammatory IIIA and noninflammatory IIIB types). Chronic prostatitis accounts for a large proportion of urology visits, and epidemiological studies show that up to 10–15 percent of adult men experience chronic prostatitis symptoms during their lifetime.

### Etiology

Chronic prostatitis develops through multiple interacting mechanisms.

#### 1. Infectious Etiology

Chronic bacterial prostatitis results from persistent infection of prostatic ducts. Common pathogens include *Escherichia coli*, *Enterococcus* species, *Klebsiella*, and other gram-negative organisms. Bacteria often form biofilms that prevent complete eradication and contribute to recurrent infections. In many patients with chronic pelvic pain syndrome, no organism is detected, suggesting alternative mechanisms.

#### 2. Inflammatory Mechanisms

In NIH IIIA prostatitis, inflammation occurs without identifiable bacteria. Studies show increased leukocytes, cytokines, and inflammatory mediators such as interleukin-6, interleukin-8, and tumor necrosis factor-alpha in expressed prostatic secretions. These mediators sensitize local nerves and contribute to persistent pain.

#### 3. Neuromuscular Dysfunction

Pelvic floor hypertonicity is a major cause of chronic pelvic pain. Excessive contraction of pelvic musculature leads to ischemia, nerve irritation, and referred pain. Chronic tightness of the levator ani, obturator internus, and surrounding muscles contributes to urinary hesitancy and perineal discomfort.



#### 4. Immune Dysregulation and Autoimmune Responses

Some patients demonstrate immune hypersensitivity to prostate antigens. Mast cells play a central role in chronic pelvic pain syndrome by releasing histamine, tryptase, and inflammatory mediators. These factors amplify pain and promote chronicity.

#### 5. Anatomical and Chemical Factors

Intraprostatic urine reflux, obstruction of prostatic ducts, or epithelial damage can trigger prolonged inflammation. Prostate stones, calcifications, and ductal obstructions are associated with recurrent bacterial prostatitis.

#### 6. Psychological and Behavioral Factors

Stress increases pelvic floor tension, modulates pain pathways, and worsens symptom severity. Anxiety, depression, and catastrophizing are common in chronic pelvic pain syndrome and influence the chronicity of symptoms.

### Clinical Presentation

Patients experience a combination of urinary, sexual, and pain symptoms.

- Pelvic pain lasting at least three months
- Pain localized to perineum, suprapubic region, lower back, testes, or penis
- Burning or discomfort during urination
- Urinary frequency, urgency, weak urinary stream
- Painful ejaculation
- Erectile or ejaculatory dysfunction in some cases
- Symptoms that fluctuate in intensity over time

Chronic prostatitis significantly affects daily functioning, sleep, and psychological well-being.

### Diagnosis

Diagnosis requires careful clinical assessment.

#### 1. Patient History and Symptom Scoring

Tools such as the NIH-Chronic Prostatitis Symptom Index (NIH-CPSI) quantify pain, urinary symptoms, and quality of life.

#### 2. Physical Examination

Digital rectal examination evaluates prostate tenderness, size, and muscular tension in the pelvic floor.

#### 3. Laboratory Tests

The Meares–Stamey four-glass test or the simplified two-glass test helps differentiate bacterial from nonbacterial prostatitis.



Urinalysis, urine culture, and analysis of expressed prostatic secretions provide information about infection and inflammation.

#### 4. Imaging

Ultrasound or MRI is reserved for refractory cases or when structural abnormalities are suspected.

#### 5. Additional Assessments

Evaluation of pelvic floor dysfunction, sexual health, and psychological stress may be necessary.

#### Treatment

Treatment is tailored to the type of chronic prostatitis and often requires a combined, stepwise approach.

#### 1. Antibiotic Therapy

Effective for chronic bacterial prostatitis.

- Fluoroquinolones (ciprofloxacin, levofloxacin)
- Trimethoprim–sulfamethoxazole
- Doxycycline for atypical pathogens

Typical duration: 4–6 weeks, sometimes extending to 12 weeks.  
Biofilm-forming bacteria may require prolonged treatment.

#### 2. Alpha-Blockers

Drugs such as tamsulosin or alfuzosin improve urinary flow by relaxing smooth muscle in the bladder neck and prostate.

Best for patients with urinary obstruction symptoms.

#### 3. Anti-Inflammatory Agents

- Nonsteroidal anti-inflammatory drugs
- Phytotherapy (quercetin, pollen extract, saw palmetto)

Studies show that quercetin improves pain and urinary symptoms due to anti-inflammatory and antioxidant effects.

#### 4. Pelvic Floor Physical Therapy

Essential for chronic pelvic pain syndrome with muscle tension.

Methods include:

- Myofascial trigger point release
- Biofeedback



- Relaxation training
- Manual stretching of pelvic floor muscles

This approach reduces pain and improves urinary function.

#### 5. Neuromodulatory Medications

Used when pain persists.

- Tricyclic antidepressants (amitriptyline)
- Gabapentinoids (gabapentin, pregabalin)

These medications modulate chronic pain pathways.

#### 6. Lifestyle and Behavioral Interventions

- Regular aerobic exercise
- Stress reduction techniques
- Limitation of caffeine, alcohol, and spicy foods
- Warm baths and heat therapy
- Avoidance of prolonged sitting or cycling

These methods help reduce symptom flares.

#### 7. Multimodal Therapy

Most patients require combined treatment targeting infection, inflammation, pelvic floor dysfunction, and psychological stress.

Studies demonstrate that multimodal therapy improves outcomes significantly compared with single-treatment approaches.

#### Prognosis

Chronic prostatitis follows a fluctuating course with periods of symptom improvement and worsening.

Patients receiving individualized, multimodal treatment achieve better long-term control.

Chronic bacterial prostatitis has a higher recurrence rate due to persistent bacterial reservoirs, while chronic pelvic pain syndrome improves best with combined physical and psychological interventions.

#### Conclusion

Chronic prostatitis is a complex condition with diverse etiological mechanisms including infection, inflammation, neuromuscular dysfunction, and psychological influences. Accurate classification and targeted therapy are essential. A multimodal strategy combining antibiotics, alpha-blockers, anti-inflammatory treatments, pelvic floor therapy, and lifestyle adjustments provides the most effective symptom relief.



**References:**

1. Толибов, Ф. (2024). ИММУННАЯ СИСТЕМА: АНАТОМИЯ ЛИМФАТИЧЕСКОЙ СИСТЕМЫ И МЕХАНИЗМЫ ИММУННОГО ОТВЕТА. Журнал академических исследований нового Узбекистана, 1(2), 55-58.
2. Farxodivich, T. F. (2024). The Syndrome of External Secretory Function Insufficiency is a Common Complication of Chronic Pancreatitis. American Journal of Bioscience and Clinical Integrity (10), 90-95
3. Farxodivich, T. F. (2024). Clinical Characteristics of Gastritis in Digestive Diseases. Research Journal of Trauma and Disability Studies, 3(3), 294-299. International Journal of Integrative and Modern Medicine Copyright © 2025 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium provided the original work is properly cited. 235
4. Farxodivich, T. F. (2024). INFECTION OF COVID-19 ON COGNITIVE FUNCTIONS. SCIENTIFIC JOURNAL OF APPLIED AND MEDICAL SCIENCES, 3(4), 325-330.
5. Tolibov F.F. - VIOLATION OF PLATELET AGGREGATION AND IMBALANCE OF HEMOSTASIS IN PATIENTS WITH CHRONIC VIRAL HEPATITIS C//New Day in Medicine 6(68)2024 264-268 <https://newdayworldmedicine.com/en/article/3758>
6. o'g'li, K. S. M. (2025). LUMBAR DISC HERNIATION: PATHOGENESIS, DIAGNOSIS, AND MODERN TREATMENT APPROACHES. International Journal of Cognitive Neuroscience and Psychology, 3(9), 33–38.
7. Jabborov Sherbek Otabek o'g'li. (2025). GASTRITS: ETIOLOGY AND TREATMENT. <https://doi.org/10.5281/zenodo.15070415>
8. Vali o'g'li, M. S. (2024). KIDNEY CANCER: EPIDEMIOLOGY AND
9. TREATMENT. EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE, 4(11), 459–463.
10. Vali o'g'li, M. S. KIDNEY CANCER: EPIDEMIOLOGY AND TREATMENT.
11. Valiyevich, M. S. (2024). Specific Morphofunctional Characteristics of the Kidney