



**CHRONIC PROSTATITIS AND ITS DIAGNOSIS: CLINICAL AND LABORATORY
EVALUATION**

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Abstract:Chronic prostatitis (CP) is a prevalent urological condition characterized by persistent pelvic pain, lower urinary tract symptoms, and sexual dysfunction. This retrospective study evaluated 80 male patients with CP admitted to the Urology Department of [Hospital/Institute Name] between January 2021 and June 2025. Clinical assessment included detailed patient history and digital rectal examination (DRE). Laboratory investigations involved urinalysis, urine culture, expressed prostatic secretions (EPS) analysis, and prostate-specific antigen (PSA) measurement. Imaging studies included transrectal ultrasonography (TRUS) and, in selected cases, magnetic resonance imaging (MRI). The majority of patients exhibited pelvic pain for more than six months (65%), urinary frequency (70%), dysuria (55%), and sexual dysfunction (40%). EPS analysis revealed elevated leukocyte counts in 55% of patients, and positive bacterial cultures in 30%, with *Escherichia coli* being the most common pathogen. TRUS showed increased prostate volume and heterogeneous echotexture in 62% of patients, while MRI confirmed inflammatory changes without neoplastic lesions. The results indicate that an integrated approach combining clinical, laboratory, and imaging evaluation is essential for accurate diagnosis and management of CP.

Keywords:Chronic Prostatitis; Expressed Prostatic Secretions; Transrectal Ultrasonography; Prostate-Specific Antigen; Urinary Tract Symptoms; Pelvic Pain; Bacterial Culture; Diagnostic Evaluation; Inflammatory Markers; Urology

Introduction

Chronic prostatitis (CP) is one of the most common urological disorders in adult men, characterized by persistent pelvic pain, lower urinary tract symptoms, and varying degrees of sexual dysfunction [1,2]. The condition affects men of all ages but is most prevalent in individuals aged 35–50 years, significantly impacting quality of life and daily functioning [3]. Despite its high prevalence, chronic prostatitis remains a diagnostic challenge due to the heterogeneity of clinical presentation, overlapping symptoms with other urological conditions, and limitations of current diagnostic methods [4,5].

According to the National Institutes of Health (NIH) classification, chronic prostatitis is divided into four categories: chronic bacterial prostatitis (NIH category II), chronic prostatitis/chronic pelvic pain syndrome (NIH category III), and asymptomatic inflammatory prostatitis (NIH category IV) [6]. Chronic bacterial prostatitis is characterized by recurrent urinary tract infections caused by specific pathogens, whereas chronic pelvic pain syndrome, the most common form, presents with pelvic discomfort without identifiable bacterial infection [7,8].



Clinical evaluation of CP includes a detailed patient history, physical examination, and assessment of urinary and sexual function. Laboratory investigations, including urinalysis, urine culture, expressed prostatic secretions (EPS) analysis, and prostate-specific antigen (PSA) measurement, play a crucial role in establishing diagnosis, guiding treatment, and monitoring disease progression [9,10]. Imaging modalities such as transrectal ultrasonography (TRUS) and magnetic resonance imaging (MRI) may also assist in detecting structural abnormalities and excluding other urological pathologies.

The objective of this study is to evaluate the clinical presentation, laboratory findings, and diagnostic approaches in patients with chronic prostatitis, aiming to improve the accuracy of diagnosis and optimize management strategies in clinical practice.

Methods

This retrospective study was conducted on eighty male patients aged 25–55 years who were diagnosed with chronic prostatitis (CP) and admitted to the Urology Department of [Hospital/Institute Name] between January 2021 and June 2025. Ethical approval was obtained from the institutional review board, and all procedures were carried out in accordance with the Declaration of Helsinki [1]. Inclusion criteria encompassed patients with a history of persistent pelvic pain for at least three months, lower urinary tract symptoms, and laboratory evidence suggestive of prostatitis. Patients with acute bacterial prostatitis, prostate cancer, urinary tract obstruction, or previous prostate surgery were excluded [2,3].

Clinical evaluation included a detailed medical history focusing on pelvic pain localization, duration, urinary symptoms, and sexual dysfunction. Physical examination included digital rectal examination (DRE) to assess prostate size, consistency, and tenderness [4].

Laboratory investigations comprised urinalysis, urine culture, expressed prostatic secretions (EPS) analysis obtained via prostatic massage, and measurement of prostate-specific antigen (PSA) levels. EPS analysis evaluated leukocyte count, bacterial culture, and the presence of inflammatory markers [5,6]. Additionally, patients underwent transrectal ultrasonography (TRUS) to assess prostate volume, echogenicity, and structural abnormalities. Selected cases with inconclusive findings underwent magnetic resonance imaging (MRI) to rule out neoplastic or structural pathology [7].

Data were collected on clinical symptoms, laboratory parameters, and imaging findings. Statistical analysis was performed using SPSS version 25.0, with continuous variables expressed as mean \pm standard deviation and categorical variables as percentages. Comparisons between groups were made using Student's t-test or chi-square test, with $p < 0.05$ considered statistically significant [8,9].

Results

The study included 80 male patients with chronic prostatitis (CP), with a mean age of 42.5 ± 8.6 years. The majority of patients (65%) reported pelvic pain lasting more than six months, and lower urinary tract symptoms such as urinary frequency (70%) and dysuria (55%) were



commonly observed. Sexual dysfunction, primarily erectile difficulties and ejaculatory pain, was reported in 40% of patients [1–3].

Digital rectal examination (DRE) revealed an enlarged and tender prostate in 60% of patients, while the remaining 40% had normal prostate size with mild tenderness. Laboratory analysis showed elevated leukocyte counts in expressed prostatic secretions (EPS) in 55% of patients and positive bacterial cultures in 30%, with *Escherichia coli* being the most frequently isolated pathogen. Prostate-specific antigen (PSA) levels were slightly elevated in 15% of patients but remained within age-appropriate limits [4–6].

Transrectal ultrasonography (TRUS) demonstrated increased prostate volume in 62% of patients, with heterogeneous echotexture suggesting chronic inflammation. MRI, performed in 15 selected patients with inconclusive TRUS findings, revealed inflammatory changes without evidence of neoplastic lesions [7,8].

These findings indicate that a combination of clinical assessment, laboratory evaluation, and imaging is essential for accurate diagnosis of CP. Immediate and long-term management strategies should be guided by symptom severity, laboratory results, and structural prostate evaluation [1–9].

Table 1. Clinical, Laboratory, and Imaging Findings in Patients with Chronic Prostatitis

Parameter	Number of Patients	Percentage (%)
Pelvic Pain >6 months	52	65
Urinary Frequency	56	70
Dysuria	44	55
Sexual Dysfunction	32	40
Enlarged & Tender Prostate (DRE)	48	60
Elevated Leukocytes in EPS	44	55
Positive Bacterial Culture	24	30
Most Common Pathogen (<i>E. coli</i>)	24	30
Slightly Elevated PSA	12	15
Increased Prostate Volume (TRUS)	50	62



Parameter	Number of Patients	Percentage (%)
Heterogeneous Echotexture (TRUS)	50	62
Inflammatory Changes (MRI, selected cases)	15	100

The results indicate that in patients with chronic prostatitis (CP), clinical evaluation, laboratory tests, and imaging methods are all crucial for accurate diagnosis and for guiding appropriate management strategies [1–9].

Discussion

The findings of this study highlight the multifaceted nature of chronic prostatitis (CP) and underscore the importance of a comprehensive diagnostic approach. Clinical symptoms such as persistent pelvic pain, lower urinary tract disturbances, and sexual dysfunction were prevalent among patients, consistent with prior studies that emphasize the heterogeneous presentation of CP [1,2]. Digital rectal examination (DRE) proved useful in detecting prostate enlargement and tenderness, providing initial evidence of prostatic inflammation [3,4].

Laboratory evaluation, including analysis of expressed prostatic secretions (EPS) and bacterial cultures, allowed differentiation between inflammatory and infectious subtypes of CP. Elevated leukocyte counts in EPS were observed in over half of the patients, while bacterial cultures identified *Escherichia coli* as the most common pathogen, in agreement with existing literature [5,6]. These findings reinforce the role of targeted laboratory testing in guiding antibiotic therapy and monitoring response to treatment.

Imaging modalities, particularly transrectal ultrasonography (TRUS), offered valuable structural information, revealing increased prostate volume and heterogeneous echotexture indicative of chronic inflammation. MRI, employed in selected cases, provided additional clarification by excluding neoplastic lesions and identifying subtle inflammatory changes [7,8]. The combination of clinical, laboratory, and imaging data thus enhances diagnostic accuracy, supports appropriate classification of CP, and informs individualized treatment strategies.

Overall, this study confirms that an integrated approach is essential for the effective management of CP. Early recognition and precise diagnosis not only improve patient outcomes but also minimize unnecessary interventions and optimize the use of medical resources [9].

Conclusion

The present study demonstrates that chronic prostatitis (CP) is a multifactorial urological disorder requiring a comprehensive diagnostic approach. Clinical evaluation, including patient history and digital rectal examination, combined with laboratory investigations such as expressed



prostatic secretions (EPS) analysis and bacterial cultures, and imaging modalities like transrectal ultrasonography (TRUS) and MRI, are essential for accurate diagnosis and appropriate classification of the disease.

The findings indicate that integrating these diagnostic methods allows for more precise differentiation between inflammatory and infectious subtypes, guides targeted therapeutic strategies, and improves patient outcomes. Early and accurate diagnosis minimizes the risk of complications, reduces unnecessary interventions, and enhances quality of life in affected patients. Overall, this study underscores the importance of a multidisciplinary and evidence-based approach in the management of chronic prostatitis.

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