



Research Article

The Influence of Chronic Prostatitis and Chronic Pelvic Pain Syndrome on Sexual Function in Iraqi Men

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Abstract

Background: Chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS) is a bothersome disease that affects men and is associated with adverse impacts on their sexual activity and quality of life. **Objective:** Assessment of sexual dysfunction in Iraqi men with chronic prostatitis. **Methods:** This study comprised two groups: the first included 112 patients with CP/CPPS, and the second involved 64 healthy volunteers. Assessment of prostatitis symptoms was done using the National Institutes of Health Chronic Prostatitis Symptom Index (NIH-CPSI). Sexual dysfunction was addressed using the International Index of Erectile Function-5 (IIEF-5) questionnaire for assessment of erectile dysfunction severity, the Premature Ejaculation Diagnostic Tool Questionnaire (PEDT) for premature ejaculation, and two questions from the Ejaculatory Function Questionnaire, questions 3 (EjQ3) and 4 (EjQ4), for painful ejaculation and satisfaction of ejaculation. **Results:** The mean score of the NIH-CPSI for CP/CPPS patients was higher than for the control group, and the pain or discomfort symptom was the most predominant. ED was reported in 46% of CP/CPPS patients, compared to 39% in the control group. PE was recorded in 49% of the patients versus 25% of the control group. Painful ejaculation was found in 65% of the studied patients with CP/CPPS and in 11% of the healthy control group. Ejaculatory dissatisfaction was evident in 67% and 17% of the patients and control groups, respectively. **Conclusion:** CP/CPPS is associated with distressing sexual dysfunction in the form of erectile dysfunction, premature ejaculation, and ejaculatory dysfunction that affects men's sexual activity.

Keywords: Chronic prostatitis, Ejaculatory dysfunction, Erectile dysfunction, Pelvic pain, Premature ejaculation, Sexual dysfunction.

تأثير التهاب البروستاتا المزمن ومتلازمة آلام الحوض المزمنة على الوظيفة الجنسية لدى الرجال العراقيين

الخلاصة

الخلفية: التهاب البروستاتا المزمن/متلازمة آلام الحوض المزمنة (CP/CPPS) هو مرض مزعج يصيب الرجال ويرتبط بآثار ضارة على نشاطهم الجنسي ونوعية حياتهم. **الهدف:** تقييم العجز الجنسي في عينة من الرجال العراقيين المصابين بالتهاب البروستاتا المزمن. **الطرق:** ضمت هذه الدراسة مجموعتين الأولى من 112 مريضاً مصاباً بالتهاب البروستاتا المزمن، والثانية تضمنت 64 متطوعاً سليماً. تم تقييم أعراض التهاب البروستاتا باستخدام مؤشر أعراض التهاب البروستاتا المزمن (NIH-CPSI) التابع للمعهد الوطني للصحة. تم تقييم الضعف الجنسي من خلال استبيان المؤشر الدولي لوظيفة الانتصاب 5 (IIEF-5) لتقييم شدة الانتصاب، واستبيان أداة تشخيص سرعة القذف (PEDT)، وسؤالان من استبيان وظيفة القذف، السؤال 3 (EjQ3) والسؤال 4 (EjQ4)، لتجربة القذف المؤلم والرضا عن جودة القذف، على التوالي. **النتائج:** كان متوسط درجة NIH-CPSI لمرضى CP/CPPS أعلى من المجموعة الضابطة، وكانت أعراض الألم أو الانزعاج هي السائدة. تم تدوين الضعف الجنسي في 46% من المرضى مقارنة بـ 39% في المجموعة الضابطة. تم تسجيل PE في 49% من المرضى مقابل 25% من المجموعة الضابطة. تم تسجيل القذف المؤلم في 65% من المرضى وفي 11% من المجموعة الضابطة. كان عدم الرضا عن القذف واضحاً في 67% و 17% من المرضى والمجموعة الضابطة على التوالي. جميع النتائج تظهر فروق ذات دلالة إحصائية. **الاستنتاج:** يرتبط CP/CPPS بالضعف الجنسي المزعج في شكل ضعف الانتصاب، وسرعة القذف، وضعف القذف الذي يؤثر على النشاط الجنسي للرجال وله تأثير كبير على نوعية حياتهم.

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INTRODUCTION

Chronic prostatitis is a frequent illness affecting adult men, with about 50–65% of males suffering from prostatitis [1]. In the National Institutes of Health (NIH) prostatitis classification system, prostatitis is broken down into four groups: category I is acute bacterial prostatitis, category II is chronic bacterial prostatitis, category III is chronic prostatitis (CP) or chronic pelvic pain syndrome (CPPS), and category IV is asymptomatic inflammatory prostatitis [2]. The commonest category of prostatitis is CP/CPPS. It affects men between the ages of 36 and 55 but can occur at any age with no distinct racial propensity. The disease is associated with notable morbidity and a significant cost impact [3]. Sexual dysfunction is linked with CP/CPPS, a well-recognized disturbing health issue with an adverse impact on sexual activity in addition to the quality of life of those patients. Improvement of sexual dysfunction can potentially relieve CP/CPPS symptoms [4]. Men with CP/CPPS tend to be more vulnerable than the general population to developing sexual dysfunction such as erectile dysfunction, premature ejaculation, ejaculatory pain or discomfort, and diminished libido [5]. However, the duration of the illness might alter the prevalence of sexual dysfunction and its severity [6]. Nearly 62% of patients with CP/CPPS suffer from sexual dysfunction; furthermore, the associated genital, perineal, and ejaculatory pain can add more distress to sexual ability and satisfaction [7]. Erectile dysfunction (ED) is observed in 40–70% of patients with CP/CPPS, but the association between both conditions is still debatable. Emotional and cognitive disorders due to increased depression and rigorous pain have been suggested to explain this relationship [8]. Prostatitis and premature ejaculation (PE) are among the commonest conditions that have a significant impact on the life quality of men and their partners through triggering anxiety and sexual dysfunction. The alteration in ejaculatory latency was reported in both acute and chronic prostatitis; these findings support the strong relationship between acquired PE and prostatitis [9]. Ejaculatory pain is rarely noted in healthy men. However, pain experienced during sexual intercourse and ejaculation has been described as a fundamental symptom of patients with chronic prostatitis, and it may be the only feature of prostatitis in some patients [10]. Pain or discomfort during ejaculation was found in 58% of patients with CP/CPPS. The existence of ejaculatory pain in patients with chronic prostatitis has worsened their quality of life and sexual performance [11]. Since the prostate gland is involved in the ejaculatory process, it appears that local inflammation may have a direct impact on the development of some instances of ejaculatory pain [12]. Sexual dysfunction like ED, PE, or ejaculatory pain, either alone or together, made the symptoms of people with CP/CPPS much worse, decreased their sexual interest, and made it harder for them to get an orgasm. [13]. Patients with CP/CPPS often complain of depression in conjunction with sexual dysfunction,

which contributes considerably to the disease morbidity experienced by several patients. Therefore, a prostatitis-affected relationship would have a worried man and a disappointed woman, indicating that this condition should be addressed from both sides [9,13].

METHODS

Study design

During the period from January 2022 to February 2023, a total of 112 males with chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS) who attended the urology center in Al-Diwaneyah Teaching Hospital from different regions in Iraq were included in this study. Another 64 healthy male volunteers participated as a control group. The study was approved by the Ethical Committee of the College of Medicine at Al-Qadisiyah University. Written consent was obtained from all participants before they were enrolled in this study.

Inclusion and exclusion criteria

Included patients are those males with chronic prostatitis or chronic pelvic pain syndrome (CP/CPPS) with a duration of at least 3 of the last 6 months. Patients who had acute or chronic bacterial prostatitis, bladder or prostate malignancy, anatomic abnormalities like bladder outflow obstruction, previous prostate procedures or surgery, or neurologic disorders were excluded.

Assessment of participants

Assessment of prostatitis symptoms with the National Institutes of Health Chronic Prostatitis Symptom Index (NIH-CPSI) Using the International Index of Erectile Function-5 (IIEF-5) Questionnaire to rate the severity of erectile dysfunction and the Premature Ejaculation Diagnostic Tool Questionnaire (PEDT) to check for premature ejaculation. Also, asking questions 3 and 4 from the Ejaculatory Function Questionnaire about any pain or discomfort during ejaculation and how satisfied the person is with the quality of ejaculation. The diagnostic workup consists of a detailed history, a physical examination (general, genital, digital rectal examination (DRE), and neurological), and investigations that include urinalysis, a two-glass test, seminal fluid analysis, urine and/or seminal culture and sensitivity, trans-rectal (TRUS) or abdominal ultrasonography, and prostate-specific antigen (PSA). Other tests that were done for selected cases were a urethral swab and culture (if urethritis is suspected), MRI (if prostatic abscess or malignancy is suspected), uroflowmetry, retrograde urethrography, or cystoscopy (to exclude bladder outflow obstruction or bladder cancer), and a prostate biopsy for suspected prostate cancer. All participants (patients and healthy controls) are evaluated for the presence and severity of sexual dysfunction by the previously mentioned questionnaire and considered for comparison. These questionnaires are printed after being translated literally into Arabic and were

given to all participants to answer them privately with explanations for any incomprehensible questions without interfering with the answer. Figure 1 shows the questionnaires used in the assessment of the study participants in both groups.

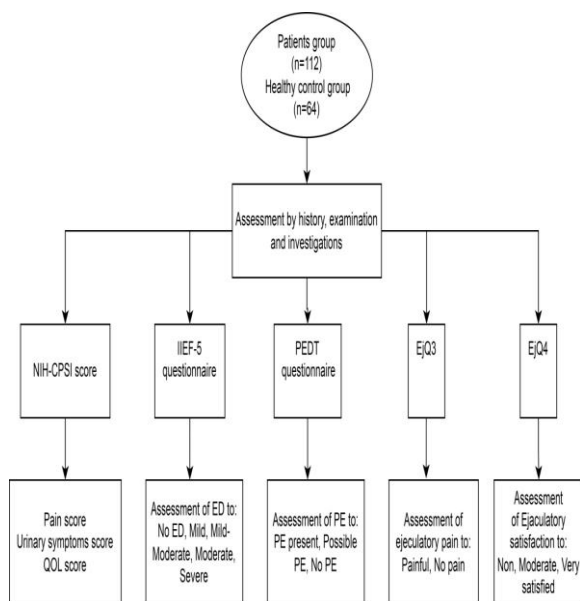


Figure 1: Flow diagram illustrating the assessment questionnaires used in the study for both groups.

Scoring and categorization

The NIH-CPSI total score ranges from 0 to 43, calculated from three main domains: pain score from 0 to 21, urinary symptoms score from 0 to 10, and impact on quality of life (QOL) score from 0 to 12 [14]. IIEF-5: ED severity was classified according to the final score; no ED was considered for a score of 26–30; those with scores of 22–25, 17–21, 11–16, and 6–10 were classified as having mild, mild to moderate, moderate, and severe ED, respectively [15]. PEDT is designed to screen males for PE. It includes five items with a score range of 0 to 25. PE is considered when the score is ≤8, possible PE when 9 or 10, and no PE when the score is ≥11 [16]. Patients with an EjQ3 score of 1-4 were regarded as having ejaculatory pain. Patients with an EjQ4 score of 1-3 are considered non-satisfied; a score of 4 is moderately satisfied, and a score of 5 is very satisfied [17].

Statistical analysis

Data analysis was done using SPSS version 18 (Statistical Package for the Social Sciences). A comparison was done between patients and control groups for reported erectile dysfunction, premature ejaculation, and ejaculatory dysfunction. The results are expressed as numbers, percentages, and the mean ± standard deviation. The Mann-Whitney U test was used to investigate potential differences and similarities between the groups, while continuous data were assessed using the independent t-test. Statistical significance was defined as a P value less than 0.05.

RESULTS

From January 2022 to February 2023, 112 male patients with CP/CPSPS and 64 healthy male volunteers as a control group were enrolled in this study. In Table 1, the mean age of the patient group was 40.6±2.1 (range from 30-52) years, and the mean age of the control group was 39.7±1.8 (range from 33-50) years.

Table 1: The NIH-CPSI scores of the studied groups

	Patients n=112	Control n=64	p-value*
Mean score	24.7	3	
Pain	11.2	1.5	0.001
Urinary symptoms	5.8	0.8	
Quality of Life Impact	7.7	0.7	

* Mann-Whitney U test

The t-test shows no statistical significance for patient ages within the two groups (p=0.491). The duration of symptoms for patients with CP/CPSPS was 9–24 (mean of 13±2.4), and the mean score of the NIH-CPSI for CP/CPSPS patients was 24.7, while for the control group it was 3. The pain or discomfort symptom was the most predominant, with a mean score of 11.2 in the patient group and 1.5 for the control volunteers; the mean scores of urinary symptoms were 5.8 and 0.8; and the impact on quality of life was 7.7 and 0.7 for the patients and control volunteers, respectively. The difference in symptoms scores between both groups was statistically significant (p=0.001, Mann-Whitney U test). Table 1 shows the NIH-CPSI scores for both groups. The severity of ED estimated by IIEF-5 in the CP/CPSPS patient group was mild (18%, n=20), mild-moderate (14%, n=16), moderate (8%, n=9), severe (6%, n=7), and no ED (54%, n=60), with a total percentage of ED in CP/CPSPS patients of 46% (n=52). While for the healthy control group, the ED severity was mild (16%, n=10), mild-moderate (12%, n=8), moderate (6%, n=4), severe (5%, n=3), and absence of ED (61%, n=39), the total percentage of ED in control men was 39% (n=25). In Table 2, the statistical analysis showed a significant statistical difference in ED severity between the two groups; the p value was 0.002. The scores of the PEDT questionnaire show the presence of PE in 49% versus 25%, possible PE in 9% versus 12%, and no PE in 42% versus 63% for CP/CPSPS patients and healthy men, respectively, with a statistically significant difference between both groups (p=0.007). Ejaculatory dysfunction, as pain and satisfaction with ejaculation, was scored by the Ejaculatory Function Questionnaire. Question 3 (EjQ3) was used for the assessment of painful ejaculation, which was found in 65% (n=73) of the studied patients with CP/CPSPS and in 11% (n=7) of the healthy control group. The statistical difference was significant (p=0.001). Ejaculatory satisfaction was covered by question 4 (EjQ4); 67% (n=75) of the patients with CP/CPSPS were unsatisfied with the quality of their ejaculation, while 24% (n=27) and 9% (n=10) were moderately

and very satisfied, respectively. In the healthy control group, ejaculatory non-satisfaction was found in 17%

($n=11$), moderately and very satisfied in 61% ($n=39$), and 22% ($n=14$), respectively.

Table 2: Pattern of sexual dysfunction in the study groups

Variables	Patients $n=112$	Control $n=64$	p -value*
Erectile dysfunction $n(\%)$	Total	52(46)	25(39)
	Mild	20(18)	10(16)
	Mild-moderate	16(14)	8(12)
	Moderate	9(8)	4(6)
	Severe	7(6)	3(5)
Premature ejaculation $n(\%)$	No ED	60(54)	39(61)
	Yes	55(49)	16(25)
	Possible	10(9)	8(12)
Ejaculatory pain	No PE	47(42)	40(63)
	Yes	73(65)	7(11)
	No	39(35)	57(89)
Ejaculatory dysfunction $n(\%)$	No	75(67)	11(17)
	Moderate	27(24)	39(61)
	Severe	10(9)	14(22)

* Mann-Whitney U test

The p value was 0.001, which indicates a significant statistical difference between the two groups. Table 2 summarizes the results of sexual dysfunction for the studied groups.

DISCUSSION

In this study, the mean score of the NIH-CPSI for CP/CPSP patients was higher than for the control participants (24.7% versus 3%), and the pain or discomfort symptom was the most predominant in both groups. Our results are comparable to those in a prospective study carried out on Turkish patients with CP/CPSP [18] and to Lee et al.'s study in Penang, Malaysia [13]. Erectile dysfunction (ED) was reported in fifty-two (46%) of our patients with CP/CPSP and in 25 (39%) healthy participants; most of the ED was mild according to the results of the IIEF-5 questionnaire (score of 22–25). A psychological consideration, along with vascular, endocrine, and neurological factors, could have a substantial value in the establishment of ED in chronic prostatitis [19]. Several studies demonstrate an increased rate of ED with CP/CPSP, with prevalence of 45.8% [7] and 48.3% [13], which are similar to our results. In a large Spanish study, the prevalence of ED was 12% to 19% [20]. The rate of ED varies according to the self-administered questionnaire used for the evaluation of sexual dysfunction. A cross-sectional study performed in Singapore employing the IIEF questionnaire revealed worse erectile function in males with CP/CPSP compared to those without prostatitis [21]. Another case-control study accomplished in Taiwan demonstrated a significant correlation between ED and a past history of chronic prostatitis [22]. The PEDT questionnaire was used for scoring PE in this study; the usefulness of PEDT as a clinical diagnostic tool has been proven by several researchers [23,16]. Premature ejaculation was higher in our patient group compared to the control group (49% vs. 25%). Anxiety and depression about

sexual performance, in addition to other factors, have been suggested to contribute to PE in men with CP/CPSP [12]. Lee et al. reported a rate of 58% of PE among the studied patients with CP/CPSP [13]. Kul'chavenia et al. reported a prevalence of 43.3% of PE in some regions of the Russian Federation [24]. Two other studies from China by Chen et al. [6] and from Italy by Cai et al. [25] show a prevalence of PE in chronic prostatitis of 41.45% and 37.2%, respectively. Pain at the time of ejaculation was experienced by 65% of our studied patients compared to 11% of healthy control participants, and 67% of our patients versus 17% of control men were not satisfied with the quality of their ejaculation. The statistical analysis shows a significant difference in these results. Based on the essential role of the prostate in the ejaculatory process, it appears that local inflammation can have a direct impact on the etiology of ejaculatory pain and discomfort [5]. In the Lee et al. findings, ejaculatory pain was observed in 54% of CP/CPSP patients [13]. Some studies demonstrated a prevalence of painful ejaculation of 1–10% in the general population [26,27]; however, the ejaculatory dysfunction in patients with chronic prostatitis and pelvic pain increased to 30–75% in different published studies [2,4,28–30]. The documented prevalence of sexual dysfunction fluctuates significantly owing to discrepancies in criteria and methodology used in sexual function analysis. Furthermore, the occurrence of sexual dysfunction in individuals with CP/CPSP has been tied to the patient's age, duration of disease, and the existence of other concurrent illnesses.

Conclusion

Sexual dysfunction is more frequently encountered in patients with chronic prostatitis or chronic pelvic pain syndrome, with an increased rate of erectile dysfunction, premature ejaculation, and ejaculatory dysfunction. Considering the morbidity of CP/CPSP, sexual dysfunction adds a further potentially

distressing health problem that affects men's sexual activity and has a substantial influence on their quality of life.

Conflicts of interest

There are no conflicts of interest.

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Data sharing statement

Supplementary data can be shared with the corresponding author upon reasonable request.

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