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Clinical Use of the UPOINT Classification in Indian Patients with Chronic Prostatitis or Chronic Pelvic Pain Syndrome

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Abstract
Introduction: *Chronic Prostatitis/Chronic Pelvic Pain Syndrome is a debilitating condition that is one of the most common reasons for visits to Urologists among male patients under the age of 50. Recently, a phenotypic method of classification and assessment of the disease has been introduced and validated. However, its use has not been studied in an Indian population so far.*
Materials and Methods: *Male patients with symptoms and signs suggestive of chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS) attending a single out-patient clinic at a tertiary-care hospital were prospectively evaluated using the NIH-CPSI score and UPOINT domains. Data from the evaluation was collated and analysed.*
Results: *A total of 30 patients who met the criteria for CP/CPPS were evaluated. Average age of the patients was 34.37 years. The positive domains were Urinary (27), Psychosocial (18), Organ-specific (13), Infection (8), Neurological/Systemic (5), Tenderness (4). Patients had an average IPSS score of (9.4). In the NIH-CPSI scores, the pain score average was (11.37), urinary scores were (6.03), and the Quality of Life domain scores were (7.2). The average NIH-CPSI score was 24.93.*
Discussion: *This study is probably the first time the NIH-CPSI score and UPOINT phenotype system has been studied in an Indian population. It was seen that the UPOINT domains were useful in classifying the disease and directing multimodal treatment.*
Keywords: *Prostatitis, NIH-CPSI Score, UPOINT Domains, Chronic Prostatitis.*

Introduction

Prostatitis is a common condition which has a prevalence rate of 2 – 9 % in the adult male population[1].Prostatitis has been classified into Categories as per the National Institutes of Health (NIH) classification system – acute bacterial prostatitis (Category I), chronic bacterial prostatitis (Category II), chronic prostatitis/ chronic pelvic pain syndrome(Category IIIA and IIIB) and asymptomatic prostatitis (Category IV)[2].

Chronic Prostatitis/Chronic Pelvic Pain Syndrome (CP/CPPS) can present with lower abdominal and pelvic pain, voiding disorders, sexual dysfunction and psychosocial disorders[3]. Accounting for more than 90% of urological outpatient cases seen, CP/CPPS remains one of the most common urologic disorders in men younger than 50 years old and it remains poorly understood and often complex to manage[4].

The validated National Institutes of Health – Chronic Prostatitis Symptom Index (NIH-CPSI) questionnaire has been used to evaluate patients with suspected CP/CPPS. It scores the patients in three main areas – pain, urinary symptomsand quality of life (QoL) impact[5].

The UPOINT system is a recently introduced method to clinically profile the patient's symptoms into six broad categories to allow individualized and multimodal therapy. The six domains are: urinary symptoms, psychological dysfunction, organ-specific symptoms, infectious causes, neurologic dysfunction, and tenderness of the pelvic floor muscles[5]. Each domain is evaluated and treated differently, permitting a multimodal approach to treatment. Many clinical trials have validated the UPOINT system[6].To the best of the author's knowledge, this is the first time that a study to evaluate the use of UPOINT and the NIH-CPSI score has been undertaken in an Indian population.

Materials and Methods

The study took place at a referral teaching hospital in the Out-Patient Department (OPD). The study was approved by the Institutional Ethics Committee of the Government Grant Medical College, Mumbai, where the study was conducted. A single urologist evaluated the patients. All patients were diagnosed as per NIH criteria[2]. The inclusion criteria were all patients with symptoms suggestive of chronic prostatitis, (1) without major structural genitourinary defects, (2) who completedthe NIH-CPSI and UPOINT scores, and (3), who had a follow-up for at least 3 months. All other patients were excluded.

All the patients who met the above criteria were asked a clinical history in detail, a clinical examination was performed which included digital rectal examination (DRE), a pre- and post-massage urinalysis, a urine culture and an ultrasound of the kidney, ureter and bladder. Symptoms were evaluated using the NIH-CPSI score and were scored in total (0-43), with sub-scores for pain (0-21), sub-scores for urinary symptoms (0-10) and sub-scores for quality of life (QoL)(0-12).Based on the overall score, patients were classified as having mild (0-15), moderate (16-29), or severe (>29) symptoms. The positivity of each domain was determined based on the study by Shoskes et al[5] (Table 1).

Patients who presented with urinary symptoms were treated with Solifenacin (5 mg, once daily), or Tamsulosin (0.4 mg, once daily), or both, depending on the urgency, or flow symptoms based on this study by Nickel[7]. Patients with depression or depression-like symptoms were referred to a psychiatrist for evaluation and treatment. For organ-specific domain, patients were counselled, or offered alternative medical treatments. Those patients who had culture positive urine, were treated according to the sensitivities[8]. Patients who had neurological symptoms, were treated with gabapentin, starting at doses of 300 mg once daily, and, if no response was seen, gradually increased to 900 mg in daily divided doses[9]. Patients who had muscle tenderness were asked to bathe in warm water and advised deep-breathing relaxing therapy.

Statistical analysis was done using Microsoft Excel 2016 software.

Table 1: Clinical characteristics of UPOIN domains. Adapted from Nickel and Shoskes[10].

Clinical characteristics of UPOINT domains	
Domain	Clinical Description
Urinary	CPSI score > 4
	Bothersome urgency, frequency, nocturia
	Flow rate < 15 ml/sec, or obstructed pattern
	Post void residue of > 100 ml
Psychosocial	Depression
	Poor coping or maladaptive behavior, catastrophizing
Organ-specific	Prostate tenderness
	Haematospermia
	Leucocytosis in the prostatic secretion
	Extensive prostatic calcification
Infection	Exclude patients with evidence of acute or chronic bacterial prostatitis (recurrent – located to the prostate

	in repeated specimens)
	Gram negative bacilli
	Documented response to antibacterial therapy
Neurologic/Systemic conditions	Pain beyond pelvis
	Irritable bowel syndrome
	Fibromyalgia
	Chronic fatigue syndrome
Tenderness	Palpable tenderness and/or painful muscle spasm or trigger points in the perineum or pelvic floor or pelvic sidewalls during DRE

Aims

To assess the feasibility of the NIH-CPSI score in evaluating Indian patients with CP/CPPS and to study the use of the UPOINT phenotypic systemin treating Indian patients with CP/CPPS.

Results

A totalof 30 patients who presented in the OPD with symptoms suggestive of CP/CPPS and who were willing to complete the questionnaire and assessment were enrolled in the study. The results are detailed in Table 2 and Table 3.

We studied the correlation between the number of positive domains and the total score in the NIH-CPSI scale. The number of positive domains was directly associated with the overall NIH-CPSI score (Spearman, r = 0.236, P = 0.208). However, in a normal distribution, this association was not significant. This could be attributed to the small sample size. The total NIH-CPSI score also increased with the number of positive domains. Symptom duration also was also correlated with total NIH-CPSI scores (Spearman, r = -0.030, P = 0.837). Symptom duration and relation to number of positive domains was also studied (Spearman, r = -.028, P = 0.882). In both these cases, the symptom duration was not found to correlate with the NIH-CPSI scores and UPOINT domains in a statistically significant manner, however, this could be due to the small sample size. Figures 1 and 2 are graphical representation of the total number of UPOINT positive domains and relationship between positive domains and total NIH-CPSI score.

Table 2 patient demographic details

Age (years, range, SD)	34.37 (21-60, SD = 8.55)
Duration of symptoms, in months (average, range, SD)	8 (3-24, SD = 5.01)
NIH CPSI Scores	
Total (average, range, SD)	24.93 (14-34, SD = 5.06)
Pain (average, range, SD)	11.37 (4-18, SD = 3.49)
Voiding (average, range, SD)	6.03 (2-8, SD = 1.85)
QoL (average, range, SD)	7.2 (4-11, SD = 2.14)
IPSS Scores (average, range, SD)	9.4 (4-26, SD = 4.74)
Pain severity (number of patients)	
Mild	3
Moderate	20
Severe	7

Table 2: showing the patient demographic and symptom details

Table 3 – Positive UPOINT Domain Scores

Domain (percentage positive)	Number of Positive Scores
Urinary	27 (90%)
Psychosocial	18 (60%)
Organ-specific	13 (43%)
Infection	8 (27%)
Neurological/Systemic	5 (17%)
Skeletal Muscle Tenderness	4 (13%)

Table 3: showing the number of positive domains.

Figure 1 Graph of positive domains

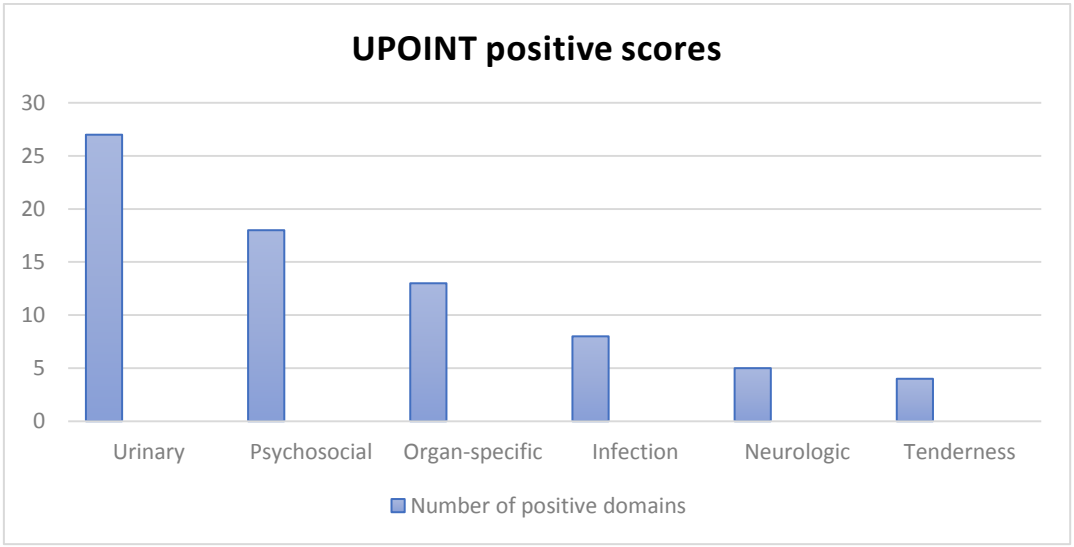
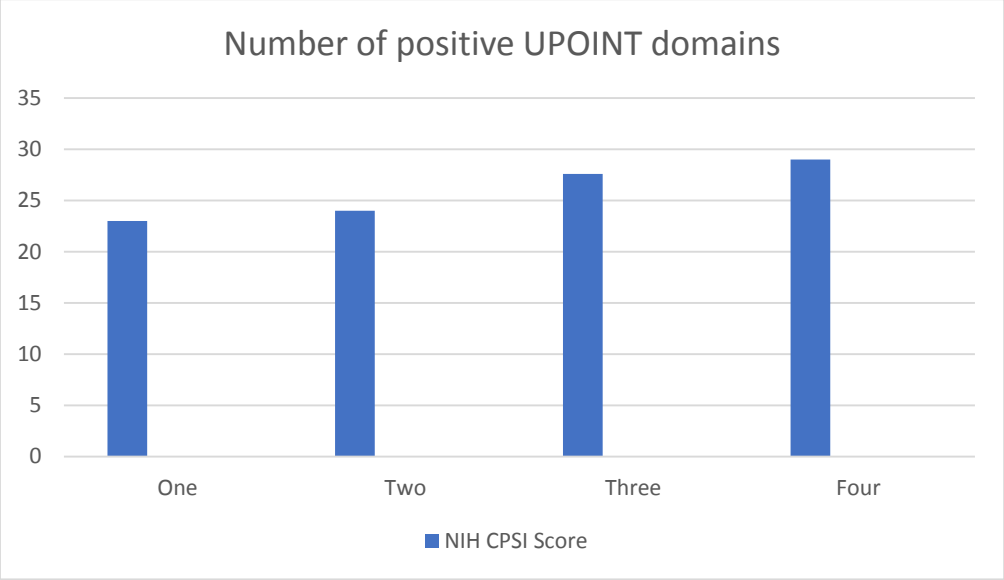


Figure 2 – graph showing number of positive domains plotted against the NIH-CPSI score



Discussion

CP/CPPS is a common condition that impacts the Quality of life of many young to middle-aged males[11].The effective treatment of CP/CPPS remains elusive. Numerous treatment studies have yielded negative orconflicting results[12,13]. Many patients report spending considerable amounts of money on medications, without resolution of their symptoms[14].Shoskes and Nickel have alluded to the diverse presentation and possible heterogenous causation of CP/CPPS previously[10]. Out of their understanding of this disease, they derived the UPOINT phenotype system of evaluation[5].

Multimodal therapybased on the patient's UPOINT phenotype has been reported to achieveexcellent long-term results[8].Ourstudy was not designed to evaluate the results of multimodal therapy, but to assess the use of UPOINT and NIH-CPSI to direct such therapy in Indian patients. We found that the UPOINT algorithm could be used in Indian CP/CPPS patients and that UPOINT-basedmultimodal treatment can be guided by its use.

The number of positive UPOINT domains correlated with symptom severity as measured by NIH-CPSI scores. There was an increase in the NIH-CPSI total score, pain subscore, urinary subscore and Qolsubscore as the number of positive UPOINT domains increased. However, as we had a small sample size, the correlation was not found to be statistically significant.

Although we had relatively fewer patients, we found that the duration of symptoms alsocorrelated with the number of positive UPOINT domains.This observation highlights the hypothesis that ongoing local inflammation and coincident tissue injury can cause local muscle spasm, and central nervous system and peripheral nervous system alterations, and cause psychosocial changes that canmaintain the symptoms many months after the initial insult haspassed[15].

The mean age of the patients in our study was 34.37 years. The prevalence and the distribution of positive UPOINT domains in our patients were similar to those described in the American, Chinese and Turkish studies on CP/CPPS[3,5,8,16]. The NIH-CPSI scores of our patients were also like these previously reported studies. The similarity of results between differing patient populations in different countries and health systems, underlines the usefulness of the UPOINT phenotype system. Although the study sample is small, the results of our study point to the utility of the UPOINT algorithm for classifying Indian patients with CP/CPPS.

Our study was not designed to evaluate the results of multimodal therapy, as has been done in other studies[17]. However, we were able to use the UPOINT phenotype to direct multimodal treatment successfully, as opposed to monotherapy previously.

The limitations of this study include the small sample size and that this study was a single-centre study. This study took place in a tertiary care centre, hence, many patients had been seen and cared for prior to their presentation at our hospital. This means that many patients with less severe symptoms may have been left out. The study was not designed to include treatment outcomes and we did not include a sexual dysfunction domain.

Conclusion

The UPOINT phenotype system along with the NIH-CPSI score can be used in Indian patients to evaluate and direct multimodal treatment for CP/CPPS. It is a promising approach to treating this complex problem. Multi-centric studies are required to further study the UPOINT system and NIH-CPSI scores, to assess multimodal treatment outcomes and the relationship of CP/CPPS with sexual dysfunction.

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