The Impact of Neuropathic Pain in the Chronic Pelvic Pain Population

Arvin K. George,* Mostafa A. Sadek, Sandeep S. Saluja, Jennifer Y. Fariello, Kristene E. Whitmore† and Robert M. Moldwin‡

From the Arthur Smith Institute for Urology, Hofstra North Shore-Long Island Jewish School of Medicine, New Hyde Park, New York, and Pelvic and Sexual Health Institute (JYF, KEW), Philadelphia, Pennsylvania

Purpose: Patients with chronic pelvic pain disorders often present with neuropathic features. We examined a cohort of patients with a primary complaint of chronic pelvic pain for the presence of neuropathic pain symptoms.

Materials and Methods: Patients with chronic pelvic pain disorders from 2 tertiary referral centers were prospectively evaluated. The validated S-LANSS (Self-Administered Leeds Assessment of Neuropathic Symptoms and Signs) survey was used to examine pain symptoms of neuropathic origin. Patients completed SF-12v2™ to assess mental/physical health domains. The 2-tailed t test and chi-square analysis were used to compare physical and mental component summaries in patients with vs without neuropathic symptoms.

Results: A total of 142 patients mean age of 45 years were included in analysis. Of the patients 72.5% with chronic pelvic pain carried more than 1 primary diagnosis. The S-LANSS survey identified symptoms suggestive of neuropathic pain in 44 patients (31%). A greater proportion of patients with a neuropathic component had altered sensation in the affected area (86.4% vs 24.5%). Patients with neuropathic pain scored 4.28 and 5.45 points lower on the physical and mental component summaries ($p = 0.053$ and 0.008, respectively).

Conclusions: A large proportion of patients with chronic pelvic pain present with neuropathic features and report decreased quality of life compared with the general population. Those with neuropathic symptoms have significantly lower quality of life than those without such symptoms. Clinicians can identify patients to use targeted therapies and use a multidisciplinary approach to care.

Key Words: urinary bladder; cystitis, interstitial; pain; nerves; quality of life

Abbreviations and Acronyms

CPP = chronic pelvic pain

HRQOL = health related quality of life

MCS = mental component summary

PCS = physical component summary

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* Correspondence: Arthur Smith Institute for Urology, Hofstra North Shore-Long Island Jewish School of Medicine, 450 Lakeville Rd., Suite M-41, New Hyde Park, New York 11040 (telephone: 516-734-8500; FAX: 516-734-8537; e-mail: arvinkgeorge@gmail.com).

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‡ Financial interest and/or other relationship with Taris, Janssen and Pfizer.

CHRONIC pelvic pain manifests as various pathological conditions, ranging from vulvodynia to chronic prostatitis. Its various clinical presentations likely represent a spectrum of disease rather than distinct clinical entities. The pathophysiology of individual diagnoses is also multifactorial and poorly understood. Challenges in diagnosis and management have prompted greater research on strategies to identify and treat these patients since current therapeutic options are still aimed at symptomatic relief.

The Special Interest Group on Neuropathic Pain of the International Association for the Study of Pain defines neuropathic pain as pain arising as a direct consequence of a lesion or disease that affects the sensory component of the nervous system. Growing evidence supports a neuropathic component to chronic pelvic pain syndromes. Neuromodulating agents, in-

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cluding tricyclic antidepressants and anticonvulsants, are often used to control symptoms. Nerve growth factor in seminal plasma and expressed prostatic secretions are potential biomarkers that correlate with pain severity and treatment response in men with chronic prostatitis/chronic pelvic pain syndrome.[1,2] It was proposed that neuropathic pain is not binary but rather lies on a spectrum with pain that is more or less neuropathic in origin. This impression contributes to the diagnostic challenge facing clinicians. Correctly categorizing patients with a central source of visceral complaints would identify those who may benefit most from targeted therapeutic regimens.

Chronic pelvic pain can be severe and disabling in affected patients but there has been little effort to objectively quantify its effect on quality of life. Quality of life data provide the added advantage of an objective evaluation before and after treatment by monitoring change in specific HRQOL domains. Patients with neuropathic pain as a result of failed back surgery, diabetic neuropathy and post-herpetic neuralgia reported substantially lower HRQOL than the general population and neuropathic pain severity emerged as a primary predictor of the negative health impact in a recent systematic review.[3,4] If physicians could correctly identify patients with a neuropathic pain component, they could offer directed therapies to patients with a limited response to conventional treatments, while at the same time targeting those at greatest risk for decreased HRQOL.

METHODS

A total of 142 consecutive patients with CPP disorders from 2 tertiary referral centers were prospectively evaluated. The primary diagnosis was recorded after comprehensive history and physical examination. Interstitial cystitis was defined according to the European Society for the Study of BPS.[5] Patients with chronic (greater than 6 months) pelvic pain, pressure or discomfort perceived to be related to the bladder, which was accompanied by at least 1 other urinary symptom such as persistent urge to void or frequency, were included in the study. Pelvic floor dysfunction was defined as chronic pelvic pain associated with hypertonicity or tenderness to palpation of the pelvic floor musculature.[6] Individuals diagnosed with provoked vestibulodynia, generalized vulvodynia and vulvar vestibulitis syndrome were combined into 1 group with vulvar disorders. Provoked vestibulodynia was defined as pain upon touch or physical contact of the vestibular area of the vulva. Generalized vulvodynia was characterized by chronic vulvar itching, burning and/or pain that cause physical, sexual and psychological distress. Vulvar vestibulitis syndrome was defined as severe pain during attempted vaginal entry, tenderness to pressure localized to the vulvar vestibule and redness of the vulvar vestibule.

The validated S-LANSS was used to examine pain symptoms primarily of neuropathic origin.[7,8] The S-LANSS pain score was determined by patient completion of the 7-question survey, including 5 questions on the quality and character of pain symptoms, and 2 instructing participants to perform self-examinations to determine allodynia and altered sensation. An S-LANSS score of 12 or greater was determined to indicate pain primarily neuropathic in origin.

The chi-square test and contingency tables were used to assess differences in symptoms between the groups. A bivariate regression model was applied to compare S-LANSS score and primary diagnosis.

Quality of life scores were derived from administration of the SF-12v2 Health Survey to assess 8 domains, resulting in a summary of respondent health status from broad physical and mental health perspectives. The 2-tailed t test was used to analyze SF-12v2 PCS and MCS in patients with CPP with and without neuropathic features. Component summaries were also compared to historical data collected from the general population to determine differences in quality of life among patients with and without CPP.

RESULTS

A total of 142 patients with a mean age of 45 years (range 14 to 82) were included in the study. Participants were predominantly female (132 of 142 or 93%) and only 10 (7%) were male. Of the patients 90 (63%) carried a diagnosis of interstitial cystitis, 117 (82%) were diagnosed with pelvic floor dysfunction and 83 (59%) were determined to have a vulvar disorder including provoked vestibulodynia, generalized vulvodynia or vulvar vestibulitis syndrome. Of the 142 patients 103 (72.5%) met the criteria for more than 1 primary diagnosis, confirming that multiple factors contributed to CPP disorders. On a scale of 1 to 10 the mean visual analog pain score was significantly greater in patients deemed to have neuropathic pain by S-LANSS (6.2 vs 4.5, $p < 0.001$).

Scores

S-LANSS. Of the patients 44 (31%) had a score of 12 or greater and, thus, were determined to have a neuropathic component to symptoms (see table). The mean total score of those with vs without a neuropathic component was 16.2 vs 3.9. Hypersensitivity and altered sensation were the most evident findings in the affected areas when comparing the 2 groups. Of those found to have neuropathic pain 86.4% (38 of 44) complained of the painful area being abnormally sensitive to touch vs 24.5% (24 of 98) of those without allodynia or neuropathic pain ($p < 0.001$). On self-examination 88.6% of patients (39 of 44) with a score of 12 or greater reported pins and needles, tingling and burning in the painful area compared to a nonpainful area and 95.5% (42 of 44) reported numbness or tenderness. Alternatively, 19.4% (19 of 98) and 39.8% (39 of 98) of those with a score of less than 12 reported such findings in the