Patients with Pelvic Floor Muscle Spasm Have a Superior Response to Pelvic Floor Physical Therapy at Specialized Centers

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Abbreviations and Acronyms

CCF = Cleveland Clinic Foundation

CPPS = chronic prostatitis/chronic pelvic pain syndrome

CPSI = Chronic Prostatitis Symptom Index

PFPT = pelvic floor physical therapy

UPOINT = urinary, psychosocial, organ specific, infection, neurological/systemic, tenderness of skeletal muscles

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Purpose: Chronic prostatitis/chronic pelvic pain syndrome is a common condition that often requires multimodal therapy. Patients with chronic pelvic pain syndrome have a high incidence of pelvic floor spasm, which can be treated with pelvic floor physical therapy. However, this is a specialized skill. We compared outcomes of pelvic floor physical therapy as part of multimodal therapy in patients with chronic pelvic pain syndrome between those treated at our institution and elsewhere.

Materials and Methods: We identified patients from our chronic pelvic pain syndrome registry with pelvic floor spasm who were seen between 2010 and 2014 for more than 1 visit. Patient phenotype was assessed with the UPOINT system and symptom severity was determined by the National Institutes of Health CPSI. A 6-point decrease in CPSI was used to define patient improvement.

Results: A total of 82 patients fit the study criteria. Mean age was 41.6 years (range 19 to 75) and median symptom duration was 24 months (range 3 to 240). Mean CPSI was 26.8 (range 10 to 41), the median number of positive UPOINT domains was 3 (range 1 to 6) and 27 patients (32.9%) were treated locally. At followup 9 patients had refused pelvic floor physical therapy, and 24 and 48 had undergone pelvic floor physical therapy elsewhere and at CCF, respectively. The mean change in CPSI was 1.11 ± 4.1 in patients who refused, -3.46 ± 6.7 in those treated elsewhere and -11.3 ± 7.0 in those treated at CCF ($p < 0.0001$). Individual improvement was seen in 1 patient (11%) who refused, 10 (42%) treated elsewhere and 38 (79.2%) treated at CCF ($p < 0.0001$). On multivariable analysis only physical therapy at CCF (OR 4.23, $p = 0.002$) and symptom duration (OR 0.52, $p = 0.03$) predicted improvement.

Conclusions: Pelvic floor physical therapy can be effective for chronic pelvic pain syndrome in patients with pelvic floor spasm. However, the outcome depends on specialty training and experience of therapists.

Key Words: prostate, prostatitis, chronic pain, pelvic floor, physical therapy specialty

Chronic prostatitis/chronic pelvic pain syndrome is a common condition with significant impact on quality of life.[1] This syndrome may be multifactorial and patients often have a variety of urological and nonurological symptoms making up the clinical phenotype.[2] In particular pelvic floor spasm is a common finding in CPPS. It can be treated successfully with PFPT, which typically includes stretches and myofascial release.[3,4]

Our approach to treating CPPS is to use multimodal therapy directed at

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positive domains of the UPOINT classification system.[5] Of all therapies the only nonmedical treatment is PFPT. This proves a challenge for the large number of patients from out of town whom we see in our tertiary referral specialty clinic. While patients have no trouble finding α-blockers or amitriptyline locally, the quality of the PFPT that they find from therapists who say that they treat urological conditions is highly variable. Indeed, we have many out of town patients in whom muscle strengthening Kegel exercises were applied by local therapists but seldom if any internal myofascial release work.

Therefore, we examined the results of multimodal therapy in CPPS patients with pelvic floor spasm in whom PFPT was recommended. We compared those treated by our therapists who specialize in the condition vs therapy done outside our institution or in patients who refused it altogether. It was our hypothesis that specialized PFPT would lead to a better symptomatic outcome.

MATERIALS AND METHODS

Patients were identified in our CPPS registry who had a diagnosis of pelvic floor spasm (positive T domain in the UPOINT phenotype) and were seen in the last 5 years. All patients met NIH (National Institutes of Health) criteria for category III prostatitis. Spasm was defined as tenderness and tightness along palpated pelvic muscles during physical examination and/or the presence of palpable trigger points. Specific location was not recorded, although the typical examination of patients in our clinic includes rectal examination and internal palpation of the pelvic floor musculature.

Patients were excluded from study if they did not undergo a followup assessment within 3 to 12 months of the primary visit. Out of town patients were arbitrarily defined by home ZIP Code™ as those with at least a 2-hour drive to our clinic. Patient symptom severity was assessed by the NIH CPSI.[6] Based on prior studies we defined a meaningful improvement of symptoms as at least a 6-point decrease in CPSI. Clinical phenotype was assessed by the UPOINT system as previously described.[5] Typically patients were recommended to receive 1 therapy per each positive domain, eg α-blocker for the urinary domain, quercetin for the organ specific domain and amitriptyline or pregabalin for the neurological/systemic domain. PFPT was performed at our institution as previously reported, including myofascial release with stretching.[7] Patients were classified as to whether and where PFPT was performed, including refused if they did not receive therapy, CCF if they had at least 1 visit at CCF and outside if therapy was done elsewhere.

Outcomes among the 3 groups were compared using ANOVA and the Tukey multiple comparison test. Pairwise comparisons of continuous variables were done with the Student t-test or Mann-Whitney test as appropriate and categorical variables were compared by the chi-square test. These studies were done using Prism® for the Mac®. To evaluate factors correlating with symptom improvement we performed univariate and multivariable logistic regression analysis. The OR and 95% CI were estimated for each variable. Propensity score analysis was also done for PFPT sites on other covariates. We then used the propensity score and PFPT sites in a simple logistic model. Additionally, a Cox proportional hazard model was applied to the data to evaluate PFPT sites as 2 groups (CCF and nonCCF). In this model followup was considered the time to event variable. The HR and 95% CI were estimated for each variable. These analyses and graphics were done using R, version 3.02 (http://www.r-project.org/) and the rms package. Statistical significance was considered at $\alpha = 0.05$.

RESULTS

A total of 82 patients fit study criteria. Mean ± SD age was 41.6 ± 13.2 years (range 19 to 75) and median symptom duration was 24 months (range 3 to 240). Mean total CPSI was 26.8 ± 6.3 (range 10 to 41). Mean CPSI subscores were 12.6 ± 3.2 for pain, 4.7 ± 3.4 for urinary and 9.5 ± 2.5 for quality of life. The median number of positive UPOINT domains was 3 (range 1 to 6). The prevalence of each individual domain was urinary in 48 patients (58.5%), psychosocial in 39 (47.6%), organ specific in 47 (57.3%), infection in 12 (14.6%), neurological/systemic in 24 (29.3%) and by definition muscle tenderness in 100%. By our definition of distance only 27 patients (32.9%) were local.

Patients were assessed at a clinic visit 3 to 12 months later (mean 5.3). At followup 9 patients (10.9%) had refused PFPT, 24 (29.2%) underwent PFPT outside and 48 (58.5%) underwent PFPT at CCF. The mean change in CPSI by PFPT choice was 1.11 ± 4.1 for refused, −3.46 ± 6.7 for outside and −11.3 ± 7.0 for CCF ($p < 0.0001$, fig. 1). Individual improvement was seen in 1 patient (11%) who refused, 10 outside patients (42%) and 38 CCF patients (79.2%) (Fisher exact test $p < 0.0001$). When comparing only patients who were or were not local to our clinic, there was no significant difference in the number of positive UPOINT domains (each median 3, Mann-Whitney test $p = 0.19$), starting total CPSI (local vs not local 25.0 ± 6.2 vs 27.7 ± 6.2, $p = 0.07$) or change of total CPSI score after therapy (local vs not local −8.89 ± 9.1 vs −7.1 ± 7.5, $p = 0.35$).

On univariate logistic regression significant variables included the number of positive UPOINT domains (OR 0.07, $p < 0.0001$), physical therapy site (OR 30.5, $p = 0.0001$) and initial total CPSI (OR 2.01, $p = 0.044$). On multivariable analysis only PFPT at CCF (OR 4.23, $p = 0.002$) and symptom duration (OR 0.52, $p = 0.03$) were significant. Using all predefined variables yielded a model that predicted the outcome with 84% accuracy (C statistic 0.839, fig. 2). We preferred using the multivariate model with ordered logistic regression because we