GYNECOLOGY

Chronic pelvic pain in an interdisciplinary setting: 1-year prospective cohort

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BACKGROUND: Chronic pelvic pain affects ~15% of women, and presents a challenging problem for gynecologists due to its complex etiology involving multiple comorbidities. Thus, an interdisciplinary approach has been proposed for chronic pelvic pain, where these multifactorial comorbidities can be addressed by different interventions at a single integrated center. Moreover, while cross-sectional studies can provide some insight into the association between these comorbidities and chronic pelvic pain severity, prospective longitudinal cohorts can identify comorbidities associated with changes in chronic pelvic pain severity over time.

OBJECTIVE: We sought to describe trends and factors associated with chronic pelvic pain severity over a 1-year prospective cohort at an interdisciplinary center, with a focus on the role of comorbidities and controlling for baseline pain, demographic factors, and treatment effects.

STUDY DESIGN: This was a prospective 1-year cohort study at an interdisciplinary tertiary referral center for pelvic pain and endometriosis, which provides minimally invasive surgery, medical management, pain education, physiotherapy, and psychological therapies. Exclusion criteria included menopause or age >50 years. Sample size was 296 (57% response rate at 1 year; 296/525). Primary outcome was chronic pelvic pain severity at 1 year on an 11-point numeric rating scale (0-10), which was categorized for ordinal regression (none-mild 0-3, moderate 4-6, severe 7-10). Secondary outcomes included functional quality of life and health utilization. Baseline comorbidities were endometriosis, irritable bowel syndrome, painful bladder syndrome, abdominal wall pain, pelvic floor myalgia, and validated questionnaires for depression, anxiety, and catastrophizing. Multivariable ordinal regression was used to identify baseline comorbidities associated with the primary outcome at 1 year.

RESULTS: Chronic pelvic pain severity decreased by a median 2 points from baseline to 1 year (6/10-4/10, $P < .001$). There was also an improvement in functional quality of life (42-29% on the pain subscale of the Endometriosis Health Profile-30, $P < .001$), and a reduction in subjects requiring a physician visit (73-36%, $P < .001$) or emergency visit (24-11%, $P < .001$) in the last 3 months. On multivariable ordinal regression for the primary outcome, chronic pelvic pain severity at 1 year was independently associated with a higher score on the Pain Catastrophizing Scale at baseline (odds ratio, 1.10; 95% confidence interval, 1.00–1.21, $P = .04$), controlling for baseline pain, treatment effects (surgery), age, and referral status.

CONCLUSION: Improvements in chronic pelvic pain severity, quality of life, and health care utilization were observed in a 1-year cohort in an interdisciplinary setting. Higher pain catastrophizing at baseline was associated with greater chronic pelvic pain severity at 1 year. Consideration should be given to stratifying pelvic pain patients by catastrophizing level (rumination, magnification, helplessness) in research studies and in clinical practice.

Key words: chronic pelvic pain, endometriosis, interdisciplinary, pain catastrophizing, prospective cohort, quality of life

Introduction

Chronic pelvic pain (CPP) is a common clinical problem present in ~15% of women worldwide.[1] CPP is defined as pelvic pain >3-6 months that is not solely related to menstruation, sexual activity, or bowel movements.[2] CPP has a complex etiology arising from an interplay of gynecologic, urologic, gastrointestinal, musculoskeletal, and psychosocial comorbidities,[2] with a potential underlying mechanism being sensitization of the nervous system.[3] CPP can persist even after standard gynecologic management and is among the most challenging clinical problems encountered by gynecologists.[4]

Given the multifactorial origins of CPP, a multifaceted care model has been proposed that includes physiotherapy, psychological therapies, and standard gynecologic management.[2,4] This multifaceted care can be multidisciplinary (multiple specialists with independent goals) or interdisciplinary (multiple specialists coordinate to provide a common goal).[5] Several prospective studies have looked at aspects of a multifaceted approach for CPP in women,[6-12] with 1 study finding that catastrophizing was associated with persistent pain at 1 year.[12]

In 2011, the government of British Columbia funded an interdisciplinary center for pelvic pain and endometriosis, integrating gynecologic management (including advanced laparoscopic surgery with excision of endometriosis of all stages) with pain education, pelvic physiotherapy, and psychological approaches to pain management, all integrated at a single center.[4,13] In a previous baseline cross-sectional study, we observed a strong association between CPP severity at baseline and catastrophizing, in addition to associations with other comorbidities (abdominal wall pain, pelvic floor myalgia, painful bladder syndrome [PBS]) and several demographic variables.[14] In contrast, we found no difference in CPP severity between women with and without endometriosis.

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In this study, we report on a 1-year prospective observational cohort at this interdisciplinary center. The first aim was to demonstrate the changes in CPP severity, functional quality of life, and health utilization over 1 year. The second aim was to diagnose comorbidities using rigorous criteria (gynecologic, urologic, gastrointestinal, musculoskeletal, and psychological) and to determine whether they were associated with CPP severity at 1 year, adjusting for baseline pain, demographic factors, and treatment effects. Based on our previous baseline cross-sectional study,[14] we hypothesized that catastrophizing, abdominal wall pain, pelvic floor myalgia, and PBS may be associated with CPP severity at 1 year.

Materials and Methods

Setting, cohort, and study criteria

This prospective cohort is based at the BC Women's Center for Pelvic Pain and Endometriosis, tertiary referral center for British Columbia.[4,13] The center includes gynecologists with expertise in management of CPP and with advanced training in minimally invasive surgery (eg, laparoscopic excision of endometriosis). The center also includes a clinical fellow, a registered nurse, a physiotherapist with special interest in pelvic pain, and a clinical counselor with a practice focused on women's reproductive health.

Details of the prospective cohort were previously published in a baseline cross-sectional study on CPP (December 2013 through April 2015).[14] The cohort was designed to examine variables associated with baseline and prospective measures of pain and quality of life. Subjects gave informed consent for inclusion in the cohort, and the study received institutional research ethics board approval from the University of British Columbia (H11-02882).

For this study of 1-year prospective follow-up, we included new or rereferrals from December 2013 through December 2014. Common reasons for rereferral included recurrent CPP or dysmenorrhea after: (1) previous conservative surgical treatment at the center (eg, secondary to myofascial pain or sensitization); (2) the patient chose to stop hormonal suppression (eg, due to side effects or to try to conceive); or (3) the patient initially declined recommended treatments, but now wished to return to follow the treatment plan. Exclusion criteria were menopausal or age >50 years (since endometriosis is the major diagnosis at our center), or no follow-up visits at the center (to exclude patients who we referred to another provider, eg, those with vulvodynia alone).

Interventions

Interdisciplinary interventions at the center were previously described.[4] In brief, following discussion with the care providers, patients could choose to undergo minimally invasive surgery (conservative procedures, eg, excision of endometriosis, or hysterectomy ± oophorectomy), medical management (hormonal, pain adjuvants, trigger point injections), and/or a pain program (involving a pain education workshop, physiotherapy, and counseling). The pain program was standardized: patients did a group pain workshop, and individual counseling and physiotherapy appointments (typically 2 visits each for counseling and for physiotherapy). Treatments were individualized to each patient. For example, if the pain was primarily nongynecologic, or if patients had persistent pain despite previous surgical or medical management, then they could be offered the pain program. In contrast, patients with focal findings on examination (eg, nodule) could be offered surgery.

For the pain program, the initial pain education workshop involved validation of patients' experiences and discussion of the multifactorial contributors to CPP. Education was also provided on the neurophysiology of pain as an output of the nervous system, such that pain can persist in the central nervous system (sensitization) even after peripheral factors in the tissue (eg, endometriosis) have been addressed.

The physiotherapy component of the pain program involved calm breathing techniques, addressing fear of movement, helpful postural and movement patterns, pacing and grading activity, and exercises to relax identified overactive muscles groups, often including abdominal obliques, rectus abdominis, hip adductors, deep hip rotators, and pelvic floor muscles. Manual therapy to address hip and sacroiliac joint asymmetries was performed as needed, and symmetry and gluteal strengthening exercises were given to those with pelvic girdle–related pain.[15] If needed, dietary, behavioral, and postural modifications for bladder/bowel function were given. Goals for all treatment were function related, with development of a self-management plan.

Counseling in the pain program included mindfulness-based strategies such as meditation, breathing, guided visualization, body scans, and progressive muscle relaxation. Patients were also taught cognitive behavioral therapy strategies whereby they learned how the identification and modification of thoughts and beliefs can affect emotions. Patients were directed to appropriate community resources and community mental health referrals, as required.

It should be noted that in some cases, patients chose to undergo surgery, physiotherapy, or counselling outside the center, for example, due to distance from the center.

Data collection

Data collection was described previously.[14] Prior to the initial consultation, subjects completed an online questionnaire using the Research Electronic Data Capture system. The questionnaire includes ratings of different types of pelvic pain (eg, CPP) on a 0-10 numeric rating scale in the last 3 months using a series of standardized questions.[14] Functional quality of life was also assessed (pain subscale of the Endometriosis Health Profile [EHP]-30 that addresses daily activities),[16] as well as physician visits or emergency room visits in the last 3 months via the questionnaire. Comprehensive data from demographics and history were also collected in the questionnaire, and were supplemented by physical exam findings and review of medical records.

Comorbidities were diagnosed using rigorous criteria from the questionnaire,

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