

Factors Associated with Severity of Irritable Bowel Syndrome Symptoms in Patients with Endometriosis

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Abstract

Objective: This study sought to examine factors associated with severity of irritable bowel syndrome (IBS) by using the Birmingham IBS symptom scale in patients presenting with endometriosis to a tertiary referral centre.

Methods: A prospective research cohort of patients presenting to a tertiary referral centre for endometriosis was evaluated for the presence and severity of IBS between December 2013 and April 2015. Patients with endometriosis had a diagnosis of IBS by using the Rome III criteria and were evaluated for severity of IBS symptoms by using the Birmingham IBS symptom scale. Multifactorial variables, including stage of endometriosis at the time of previous surgery, clinical examination findings, mood disorder questionnaire scores, and lifestyle factors, were evaluated using the *t* test and Spearman rank correlation test.

Results: A total of 194 of 373 (52%) women with confirmed endometriosis had a diagnosis of IBS. Factors associated with severity of IBS symptoms in patients with endometriosis included lower-stage endometriosis ($P = 0.004$), presence of mood disorders ($P < 0.001$), tenderness on physical examination ($P \leq 0.001$), a history of sexual assault ($P \leq 0.02$), and presence of sleep disturbance ($P \leq 0.01$). Evaluation of the subscales of the Birmingham IBS symptom scale revealed a strong association between the previously identified factors and the pain subscale.

Conclusion: Using the Birmingham IBS symptom scale, our study revealed more severe IBS symptoms in patients with lower-stage endometriosis and identified other variables highly associated with severity of IBS. Continued research is required to characterize further the clinical importance of IBS symptoms in patients with endometriosis-associated pelvic pain.

Key Words: Endometriosis, irritable bowel syndrome, quality of life, Birmingham IBS severity scale

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Résumé

Objectif : Cette étude avait pour but d'étudier, au moyen du questionnaire *Birmingham IBS symptom scale*, les facteurs associés à la gravité du syndrome du côlon irritable (SCI) chez des patientes atteintes d'endométriose se présentant dans un centre régional de soins tertiaires.

Méthodologie : Une cohorte de patientes atteintes d'endométriose s'étant présentées dans un centre régional de soins tertiaires entre décembre 2013 et avril 2015 a été étudiée de façon prospective; on a déterminé si elles étaient atteintes d'un SCI et sa gravité, le cas échéant. Les patientes atteintes d'endométriose ayant reçu un diagnostic de SCI selon les critères de Rome III ont répondu au questionnaire *Birmingham IBS symptom scale* visant à évaluer la gravité de leurs symptômes de SCI. Les variables multifactorielles – stade de l'endométriose au moment de la dernière chirurgie, constatations à l'examen clinique, résultats des questionnaires sur les troubles de l'humeur et facteurs relatifs au mode de vie – ont été analysées au moyen du test *t* et du test de corrélation de rang de Spearman.

Résultats : Sur les 373 femmes de la cohorte, 194 (52 %) ont reçu un diagnostic de SCI. Les facteurs associés à des symptômes de SCI plus graves chez les patientes atteintes d'endométriose comprenaient l'endométriose de stade peu avancé ($P = 0,004$), la présence de troubles de l'humeur ($P < 0,001$), la présence de douleur à la pression au cours de l'examen physique ($P \leq 0,001$), des antécédents d'agression sexuelle ($P \leq 0,02$) et la présence de troubles du sommeil ($P \leq 0,01$). L'évaluation des résultats de chaque catégorie du questionnaire *Birmingham IBS symptom scale* a révélé une forte association entre ces facteurs et la douleur.

Conclusion : À l'aide du questionnaire *Birmingham IBS symptom scale*, notre étude a montré que les patientes atteintes d'endométriose de stade peu avancé présentaient des symptômes de SCI plus graves que celles dont le stade était plus avancé. Elle a également permis de mettre en évidence d'autres facteurs fortement associés à la gravité du SCI. Cependant, d'autres études seront nécessaires pour mieux définir l'importance clinique des symptômes du SCI chez les patientes souffrant de douleur pelvienne associée à l'endométriose.

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INTRODUCTION

Endometriosis is a gynaecological condition defined by the presence and proliferation of endometrial glands and stromal tissue outside the uterus, leading to an estrogen-mediated chronic inflammatory process.^{1,2} The chronic condition affects between 5% to 10% of women of reproductive age but can present in 33% of women with chronic pelvic pain and 50% of women with infertility.^{1,3-6} At the time of laparoscopy, endometriosis is staged as minimal, mild, moderate, or severe according to the classification system described by the American Society for Reproductive Medicine.^{1,7}

Recently in the gynaecological literature, there has been an increased understanding of the relationship of endometriosis, chronic pelvic pain, and central sensitization.⁸ A multidisciplinary approach has been advocated in the management of endometriosis and chronic pelvic pain because of the association with other pain syndromes and mood disorders including irritable bowel syndrome (IBS), painful bladder syndrome, provoked vulvodynia, pelvic floor hypertonus or myofascial pain, pain catastrophizing, anxiety, and depression.⁸⁻¹⁰ Endometriosis has also been noted to be associated with increased visceral and pressure hypersensitivity.^{11,12} This finding may provide some insight into the association with IBS.

IBS is a functional bowel disorder affecting approximately 11% of the population.¹³ According to the Rome III diagnostic criteria, the disorder is characterized by recurrent abdominal pain or discomfort that improves with defecation, and the onset is associated with a change in frequency of stool and/or a change in form of stool.¹⁴ Severity of gastrointestinal symptoms has been measured using various questionnaires including the visual analogue scales for IBS, the IBS symptom severity scale, and the Birmingham IBS symptom scale.¹⁵ The Birmingham IBS scale has been validated in several studies.¹⁵⁻¹⁷ The self-administered questionnaire consists of 11 questions that are further subcategorized into three symptom-specific scales assessing constipation, diarrhea, and pain.^{16,17} To date, an in-depth exploration of the factors associated with severity of IBS symptoms in the context of endometriosis has not been completed.

Our current study aimed to provide an exploratory analysis of the factors associated with severity of IBS symptoms in patients presenting to a tertiary referral centre with endometriosis by using the validated Birmingham IBS symptom scale. The goal was to supply a clinical picture of patients with the dual diagnosis of endometriosis and IBS. In particular, we aimed to examine the associations among IBS severity, stage of endometriosis, psychological factors, and clinical examination findings.

METHODS

Study Population

The study population was analyzed using cross-sectional baseline data of an ongoing prospective research cohort study conducted at the BC Women's Centre for Pelvic Pain and Endometriosis in Vancouver. Patients were recruited and enrolled between December 2013 and April 2015 after undergoing a full history and examination at the tertiary referral centre. Data collected prospectively from patients' online questionnaires, physical examinations, and physicians' evaluations was entered into an online Research Electronic Data Capture (REDCap) database. The study was approved by the Research Ethics Board of the University of British Columbia (H11-02882).

Study Design

Patients were included in this study if they completed our online questionnaire, had a full gynaecological assessment, had a diagnosis of endometriosis, met the diagnostic criteria for IBS (Rome III criteria), and completed the Birmingham IBS symptom scale to evaluate the severity of their symptoms. Patients not fulfilling the foregoing criteria were excluded. The diagnosis of endometriosis was made on the basis of previous surgical diagnosis and treatment completed before referral to the tertiary centre. After a review of the previous surgical report, the stage of endometriosis was assigned on the basis of the American Society for Reproductive Medicine classification system into the categories of minimal-mild and moderate-severe endometriosis. The Birmingham IBS symptom scale consists of three subscales assessing constipation, diarrhea, and pain for a total score of 55.

We analyzed associations between IBS severity (as assessed by the Birmingham IBS symptom scale), and endometriosis stage, clinical findings, severity of mood disorders, and lifestyle factors. Data collected included age, BMI, patient self-rating of pain, identification of abdominal wall myofascial trigger points with the Carnett test, digital pelvic examination, and endovaginal ultrasound examination.¹⁸ The online questionnaire allowed patients to rate their pain on a scale of 10 and included dysmenorrhea (excluding amenorrheic patients), deep dyspareunia, superficial dyspareunia, dyschezia, back pain, and chronic pelvic pain, experienced in the last 3 months.

Mood disorders were also assessed as part of the online questionnaire administered before the patient's presentation to the centre. The validated psychological questionnaires administered included the Patient Health Quality-9 questionnaire for evaluation severity of depression symptoms,¹⁹ the Generalized Anxiety Disorder-7 questionnaire to assess

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