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Original Research Article

Female pelvic floor myofascial syndrome and its relationship with lower urinary tract storage symptoms

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ABSTRACT

Background: Pelvic floor myofascial syndrome is defined as non-articular skeletal muscle pain, characterized by the presence of trigger points. Present in 14-23% of patients with chronic pelvic pain. It has an impact on urinary function. The prevalence of lower urinary tract symptoms is 15-67%, with storage symptoms predominating in patients with PFMS. Objective was to determine the relationship between female pelvic floor myofascial syndrome and lower urinary tract storage symptoms.
Methods: This was a retrospective, observational, descriptive, cross-sectional, homodemic and single-center study at University Hospital Doctor José Eleuterio González, Monterrey, Nuevo Leon, Mexico from period one from April 1st to June 30th, 2022. Type of non-probabilistic convenience sampling. Database in Excel 2016, Pearson's X^2 statistical test in the SPSS V25® program.
Results: 136 patients with PFMS and LUTS storage were evaluated. The most frequent age group was 46-55 years with 33.1% (N=45); the marital status was married with 74.3% (N=101). In relation to education 55.9% (N=76) with a bachelor's degree. The most frequent storage symptoms were nocturia 67.6% (N=92) $p<0.05$, frequency 60.3% (N=82) $p=0.512$, urgency 57.4% $p<0.005$.
Conclusions: Knowing the correlation between PFMS and storage LUTS can guide specific pain treatment with review of urinary symptoms. In patients with nocturia, frequency, urgency, SUI and UUI, a physical examination should be performed and included trigger points in the pelvic floor. Nocturia is the most prevalent storage LUTS in PFMS.

Keywords: Pelvic floor myofascial syndrome, Lower urinary tract symptoms, Frequency, Urgency, Nocturia, Incontinence

INTRODUCTION

Chronic pelvic pain (CPP) is defined as non-cyclic, continuous or intermittent pain in the lower abdomen or pelvis for 6 months. It has a prevalence that varies with age, 18/1000 among 15-20 years, and 28/1000 in >60 years, affecting 18.6% of women in Mexico. MPFS is a poorly recognized component of CPP and is present in 14-23% of patients with this condition.[1] Treatment costs in the US are estimated at more than $8 billion annually. Approximately 15% of women have missed work and 45% have a decrease in their work activity.[2] Pelvic floor

myofascial syndrome is a musculoskeletal disorder, characterized by pain in the muscles and ligamentous insertions of the pelvic floor.[3] The diagnosis is based on clinical history and physical examination of the pelvic floor musculature.[4]

A hallmark of the diagnosis is the presence of trigger points at the site of pain, which are small, palpable, hyperirritative nodules located over a band of skeletal muscle and that are in a sustained state of contraction. They may hurt spontaneously (active) or after manipulation (latent).[5] The most common urological dysfunction found in patients with PPMS is interstitial cystitis/bladder pain syndrome, which typically presents bladder pain, urgency, frequency, dysuria, nocturia and pelvic pain.[6] Lower urinary tract symptoms (LUTS) are very common in women of any age, their prevalence increases with age and varies according to the population studied from 15% to 67%. Their importance lies in the fact that they affect the quality of life.

The International continence society (ICS) divides LUTS into seven categories: storage symptoms; frequency, nocturia, urgency, stress urinary incontinence (SUI), urgency urinary incontinence (UUI), voiding symptoms (delay, intermittency, double urination), postvoid symptoms (feeling of incomplete emptying), sexual symptoms, pelvic organ prolapse symptoms, genital and lower urinary tract pain symptoms, and genitourinary pain syndrome (pelvic pain syndrome).[7] The lower urinary tract symptoms that occur in myofascial syndrome can be explained by presence of hypertonicity of the pelvic floor muscles. This muscular hypertonicity is located in a specific point of the affected muscles that are established as trigger points that produce motor dysfunction of the muscle. The presence of a muscle contracture in the pelvic floor produces alterations in the response of the bladder reflex for the closure or opening of the internal sphincter, which gives rise to the urological symptoms associated with pelvic myofascial syndrome such as frequency, urgency and incontinence.[8]

Evaluation instrument

The ICS developed an instrument, the Modular Women's LUTS Questionnaire (ICIQ-FLUTS), widely recommended for assessing LUTS. This questionnaire is made up of three domains that assess storage, emptying and incontinence. The questionnaire consists of 18 items, with two questions in each one, except for questions 9, 15 and 18, which consist of a single item. Respondents have to answer each question with a score of “0 to 2”, “0 to 3” or “0 to 4”, indicating the frequency or severity of the symptoms. The resulting total score ranges from 0 to 69. Above one point it is considered pathological, and the higher the score, the greater the degree of severity of the symptoms.

In order to assess the internal consistency of the instrument, Cronbach's Alpha coefficient was used, with a validation level of A. A value of 0.7 is considered a reliable instrument.[9]

Specific background

Grinberg et al, in 2019, among the urinary symptoms in patients with PFMS, they presented painful bladder syndrome that is characterized by bladder pain and urinary storage symptoms (urgency, nocturia and frequency). A total of 50 patients with PFMS and urinary symptoms participated, 39 improve before therapy (p=0.001).[10] Wolff B et al in October 2020, they evaluate 193 patients with overactive bladder (frequency, urgency, nocturia, with or without incontinence), where 109 (56.6%) with SMPP.[11]

The same author in 2019 evaluate LUTS (urgency, frequency, urgency urinary incontinence, dysuria). 250 patients were included, with urinary frequency N=160 (64%), urgency N=155 (62%), incontinence N=140 (50%), pelvic pain N=43 (17.2%) and dysuria N=25 (10%). Pelvic floor myofascial syndrome was detected in N=125 (50%). Symptoms associated with SMPP were dysuria (OR 4.13, 95% CI, 1.08-15-78), urgency/ frequency (2.72, 1.47-5.04), pelvic pain (2.57, 1.08-6.12).[12]

Maister et al in their 2017 article, Pelvic floor and obturator internus myofascial pain is related to the severity of lower urinary tract symptoms. A total of 912 patients were evaluated, 92% reported some urinary symptoms and 93.4% had pelvic floor myofascial pain. Urinary urgency was significantly correlated with pain on bilateral palpation of the obturator muscle.[13] In the gynecological urology outpatient clinic, a large number of patients come with symptoms of the lower urinary tract. However, not all patients undergo a targeted examination in search of trigger points, in order to make a diagnosis and subsequently pelvic floor myofascial syndrome treatment can go unnoticed.

Objectives

Determine the relationship between female pelvic floor myofascial syndrome and lower urinary tract storage symptoms.

METHODS

This was a retrospective, observational, descriptive, cross-sectional, homodemic and single-center study at University Hospital Doctor José Eleuterio González, Monterrey, Nuevo Leon, Mexico from period one from April 1st to June 30th, 2022. Type of non-probabilistic convenience sampling. Selection criteria: women with PFMS and Storage LUTS. The validated International consultation on incontinence questionnaire female lower urinary track symptoms which consists of 18 items was applied to patients who met the selection criteria. Database

in Excel 2016, Pearson's X^2 statistical test in the SPSS V25® program.

RESULTS

Total 136 patients with PFMS were evaluated. The most prevalent group age was 46-55 years with 33.1% (N=45) (Figure 1). In relation with others sociodemographic data, the most frequent marital status was married with 74.3% (N=101); about the degree of education, bachelor's degree was the most frequent with 55.9% (Table 1).

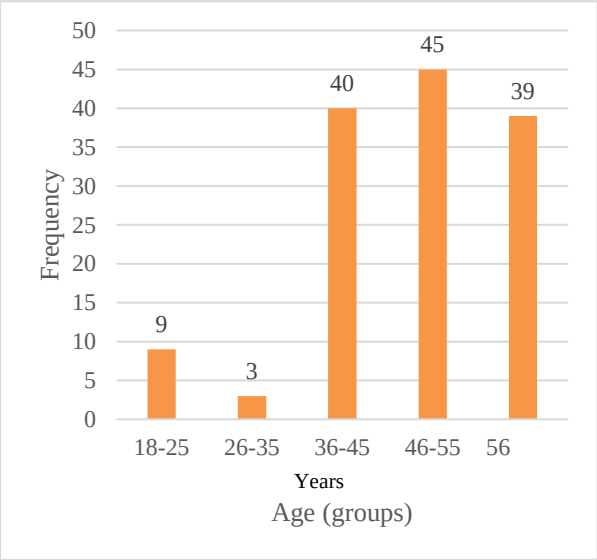

Figure 1: Age groups.

Table 1: Sociodemographic data.

Parameters	N	%
Marital status		
Married	101	74.3
Single	35	25.7
Education		
Bachelo's degree	76	55.9
High school	46	33.8
Middle school	11	8.1
Elementary school	3	2.2

The most frequent LUTS were nocturia 67.6% (N= 92, p<0.05), frequency 60.3% (N=82, p=1), urgency 57.4% (N=78, p=0.003), SUI 47.8% (N=65, p=0.239) and UUI 30.1% (N=41, p=0.001) (Table 2).

Table 2: Frequency of storage LUTS.

LUTS	%	N	P value
Nocturia	67.6	92	<0.05
Frequency	60.3	82	1
Urgency	57.4	78	0.003
SUI	47.8	65	0.239
UUI	30.1	41	0.001

DISCUSSION

Grinberg et al, reported the presence of frequency, urgency and nocturia in 78% of the patients with PFMS, in our study it was 61.7%. Both with more than 60%, however, this different might be due to different methodologies and sample size.[10] Wolf et al reported the presence of LUTS in patients with PFM, with frequency in 64%, urgency 62% and UUI 56%.[11,12] The same author in 2020 reported that in patients with PFMS 39% had frequency, urgency and nocturia.[11]

In our study the most frequents LUTS in patients with PFMS were nocturia 67.6%, frequency 60.3%, urgency 57.4%, similar as Wolf's studies. Finally, Maister et al report that more that 90% of the patients with PFMS had at least one LUTS, in our study 67.6% had at least one LUTS. This may be due to the large difference in sample size in both studies (912 vs. 136), however, in both studies we found LUTS in more than 65% of the patients.[13]

This study has some limitations. The study populations were relatively small compared with international research and conducted in a short period of time. Therefore, the study findings cannot be generalized to the entire population.

CONCLUSION

Knowing the correlation between PFMS and storage LUTS can guide specific pain treatment with review of urinary symptoms. In patients with nocturia, frequency, urgency, SUI and UUI, a physical examination should be performed and included trigger points in the pelvic floor. Nocturia is the most prevalent storage LUTS in PFMS.

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