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Bardin M[1], Giraldo P[1], Mira T[1], Fante J[1], Melo C[1], Claudia F[1], Marques A[1]
1. *Unicamp - Campinas State University*

ASSOCIATION OF URINARY INCONTINENCE AND HYPERTONIC PELVIC FLOOR MUSCLES: A PILOT STUDY TREATING WOMEN WITH VESTIBULODYNIA

Hypothesis / aims of study

Provoked vestibulodynia (PVD) is an underdiagnosed chronic vulvar pain disorder that affects at least 15% of women in their reproductive age. At physical evaluation, women with PVD has hypertonic pelvic floor muscles (PFM) and pain provoked by touch on the vulvar vestibule[(1)]. Unlike most common causes of urinary incontinence related to the weakened muscles, this population is affected by a broad range of dysfunctions due to the difficulty of relaxing and coordinating muscles of the pelvic floor. This study aims to associate vulvar pain and score of PVD diagnosis and prevalence of self-reported urinary loss.

Study design, materials and methods

In a clinical trial, 26 women diagnosed with PVD were randomly assigned to receive either tricyclic antidepressant (Amitriptyline hydrochloride) associated with pelvic floor muscle exercises composed both of Kegel and stretching of PFM or Amitriptyline hydrochloride associated with electrotherapy (interferential current, eight sessions of 20 minutes each). Participants were evaluated before and after treatment by gynaecologic examination measuring vulvar pain (swab test and analogic pain scale), PVD diagnose score (Friedrich's score – table 1[(2)]) and self-reported urinary incontinence through a structured questionnaire. Exclusion criteria were: presence of infections or genital cancers, chronic degenerative diseases, age younger than 18 or older than 45 years, neurological disease that jeopardizes the contraction of the PFM, taking antidepressant drugs that have interaction with amitriptyline hydrochloride and using cardiac pacemaker. Pain rating for swab and Friedrich's test are presented with mean and standard deviation, and urinary loss before and after treatment of PVD was analysed with Wilcoxon test through the software SAS (Release 9.1, SAS Institute, Cary, NC, USA, 2002 - 2003).

Results

Of 26 participants, almost 65% (n=17) reported to have stress urinary incontinence at least three times a week and no one was in treatment for this dysfunction. Before treatment for PVD, pain rating for swab test was 19.8 (±5.6) and Friedrich's score was 9.7 (±2.3). There were no difference between means for these scores for women with and without urinary incontinence before (swab test: 18.59±5.8 vs. 21.11±5.5, p=0.35 and Friedrich's test: 10.12 (±2.5) vs. 9.33 (±2.1), p=0.45) nor after treatment (swab test: 8.06±5.7 vs. 10.33±10.4, p=0.93 and Friedrich's test: 6.41 (±3.1) vs.6.56 (±3.0), p=0.8). After randomization, 14 women were treated with electrical stimulation therapy and 12 were treated with a program that included contractions and stretching of PFM. Prevalence of urinary incontinence was similar for both treatment groups (electrical therapy: 71.42 [n=10] vs. PFM exercises: 58.3% [n=7], p>0.05). Swab test pain rate and Friedrich's score were significantly smaller after both treatments (p<0.05) and due to the small number of patients enrolled, results were analysed comparing before and after treatment of both treatment groups together, as shown in table 2. Also, women with PVD reported less frequency of urinary incontinence after treating for PVD symptoms (table 3).

Interpretation of results

It is known worldwide that hypertonic muscles are usually weak muscles[(3)]. As long as stress urinary continence requires fast contraction of pelvic floor muscles, it is plausible to expect that women with difficulties on relaxing their PFM such as occurs with women with PVD will have complications with stress urinary continence mechanisms. However, results showed no difference between intensity of vulvar pain or PVD diagnosis in women with and without urinary incontinence. It is very interesting to observe, though, that despite of which treatment participant received, both pelvic floor exercises and electrotherapy associated with tricyclic antidepressant led to improvement of urinary symptoms both in prevalence and to frequency of urinary loss. This probably occurs because of the relaxation that PFM might have after reaching a lower pain status provided by the treatment, and consequently returning to its primary function.

Concluding message

This is the first study to associate urinary incontinence in women with provoked vestibulodynia. We conclude that women with PVD have high prevalence of stress urinary incontinence and that those who are efficiently treated to diminish vulvar pain can improve frequency of urinary loss. However, trials assessing more participants and with longer follow-up is required, as this is a pilot study.

Table 1. Friedrich's score

Friedrich Criteria for Vulvodynia Diagnosis					
Score	*Dyspareunia*	*Burning*	*Itching*	*Swab test*	*Erythema*
0	Absent	Absent	Absent	Negative	Absent
1	Mild pain	Mild	Mild	Weakly positive	Mild
2	Persistent	Moderate	Moderate	Positive	Moderate
3	With intercourse	Severe	Severe	Strongly positive	Severe

Table 2. Swab test and Friedrich's score for vestibulodynia diagnose of women with provoked vestibulodynia before and after vulvar pain treatment

	Before treatment	**After treatment**	***p* value ***
Variables	Mean±SD	Mean±SD	
With Urinary Incontinence			
Swab test	18.59±5.8	8.06±5.7	**0.0007**
Friedrich's Score	10.12±2.5	6.41±3.1	**<0.001**
Without Urinary Incontinence			
Swab test	21.11±5.5	10.33±10.4	**0.02**
Friedrich's Score	9.33±2.1	6.56±3.0	**0.001**

*Wilcoxon test comparing urinary loss before and after treatment.

Table 3. Prevalence and frequency of urinary incontinence among women with provoked vestibulodynia before and after vulvar pain treatment

	Before treatment	**After Treatment**	***p* value ***
Variables	% (n=26)	% (n=26)	
Women with Urinary Incontinence	65.3 (n=17)	42.2 (n=11)	**0.0009**
Frequency of urinary loss			
More than three days a week	30.6 (8)	3.8 (1)	**<0.001**
Until three days a week	34.7 (9)	30.8 (8)	0.73
Never or very rare (less than once a week)	34.7 (9)	65.4 (17)	**<0.001**

*Wilcoxon test comparing urinary loss before and after treatment.

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Disclosures

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