

Pelvic Physical Therapy Distance Journal Club

March 6, 2024

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Article 1: Association of physical therapy techniques can improve pain and urinary symptoms outcomes in women with bladder pain syndrome: a randomized controlled trial. Hacad CR, Lucon M, Milhomen SAR, et al. Int Braz J Urol 2022;48:807-16. <https://orcid.org/0000-0003-1960-4958>.

Introduction:

- “Bladder pain syndrome” (BPS) is defined as the presence of pain, pressure and discomfort in the pelvis, perineum, and genitalia for more than 6 months with at least one lower urinary tract symptom, such as frequency, urgency, or nocturia, in the absence of urinary infection or other pathology.”
- Pelvic floor myofascial pain can also cause decreased diaphragm excursion with breathing and contribute to pelvic asymmetries due to altered pain-avoiding body mechanics or abnormal forces placed on the body as a result of overactive pelvic floor muscles.
- Literature also supports the use of high frequency TENS (75-100 Hz) for reduction in pain and tolerability in women with chronic pain conditions. Additionally, postural reeducation exercises could also be an effective treatment due to iliac crest asymmetries, decreased motor control, coordination of the involved musculature, balance and gait impairments, and diaphragm excursion as a result of chronic pain.

Aim/Primary Aim:

- The primary aim of this study was to determine if the implementation of TENS or postural exercises in conjunction with manual therapy and biofeedback would further improve pain and urinary symptoms in women with BPS.

Study Design/Study Format: A parallel randomized control trial

Methods:

- Women over 18 years-old diagnosed with BPS according to the NIH criteria were evaluated by a urology clinic and then referred to an outpatient physical therapy clinic.
- The selected women had an initial assessment: Visual Analog Scale of Pain, O’Leary-Sant - The Interstitial Cystitis Symptom and Problem Index, and the Female Sexual Function Index were given + palpation of the pelvic floor and perineal areas to identify myofascial trigger points.
- Patients were then divided into three groups of treatment, (TENS, postural, and conventional) for 1 session a week for 10 weeks.

Protocol:

- Conventional group - Biofeedback for pelvic floor relaxation and manual therapy to release the tension in the suprapubic, pelvic, and intravaginal area.
 - Internal manual therapy of pelvic floor muscles - trigger point release with digital pressure and myofascial stretching if appropriate.

- Biofeedback - 10 fast contractions with 5 seconds of relaxation between them followed by 10 sustained contractions of 5 seconds with 10 seconds of relaxation between them. One minute of pelvic floor relaxation was performed at the end.
 - CONSIDER: Is it best practice to work on pelvic floor quick flicks and long holds in the presence of myofascial pain? What are the benefits of this? Any risks?
- TENS group - Conventional treatment + peripheral neuromodulation to relieve pain directly to the tender area. Two electrodes were placed in pain areas with parameters of 100 Hz, 50-100 μ s, and current intensity according to the patient's tolerability
- Postural group - Conventional treatment + exercises to promote pelvic mobility and respiratory exercises increasing diaphragmatic excursion.
 - 10 repetitions of breathing exercises in supine + 10 repetitions of hip IR/ER in sitting + 10 repetitions of hip IR/ER and lateral movement in standing
 - CONSIDER: Can you replicate these exercises yourself? Are there any other exercises you think would work on postural mobility and promote optimal respiration?
- All Participants - Instructed to complete home training daily 3x/day during treatment. The TENS and conventional groups were instructed to perform pelvic floor relaxation exercises, and the postural group was instructed to perform pelvic floor relaxation exercises and postural exercises.
- Participants were evaluated at the end of the treatments and 3 months follow-up

Results:

PAIN (perineal and suprapubic)

- During Treatment: Postural intervention group experienced a significantly longer duration of symptoms compared to TENS or Conventional group
- After Treatment: Postural intervention group had significantly improved perineal and suprapubic pain compared to pretreatment assessment. Postural intervention showed significant decrease in presence of perineal and suprapubic trigger points
- 3 Month Follow Up: Postural intervention group showed persistent improvement in suprapubic pain. Postural intervention showed significant MAINTENANCE of decreased presence of perineal and suprapubic trigger points

URINARY SYMPTOMS (urgency, frequency, nocturia)

- After Treatment: Postural group had significant improvement in urinary symptoms compared to pretreatment and significant improvement in urinary symptoms compared to conventional intervention group. TENS group had significantly improved urinary symptoms compared to Conventional intervention group
- 3 Month Follow Up: Postural intervention group showed persistent improvement in urinary symptoms

MEDICATION USE: After Treatment, there was no change in use of anticholinergic, antidepressant, or anticonvulsant in ANY group. Postural group showed a significant decrease in painkiller intake.

OVERALL:

- Conventional treatment ALONE did not achieve satisfactory results compared to postural or TENS groups in urinary symptoms or pain
- NO groups showed improvement in sexual function following treatment
- NO participants reported burning sensation/pain/discomfort during or after treatment

- Postural group had increased HEP adherence during treatment and follow up (100%) compared to TENS and conventional groups (63.6% each)

Discussion:

- Urology groups recommend the use of Biofeedback and manual therapy as best treatment options when treating BPS, but no exact treatment protocols exist;
- No recommendation for non-invasive treatments, such as TENS or postural exercises, even though research has supported use of these with other chronic pain conditions
- Findings from this study contradict findings from Fitzgerald et al. (showed 59% of women who received MT had improved pain and PFM tension). In this study, MT and biofeedback did NOT improve perineal and suprapubic pain
- Findings from this study showed a more significant improvement in urinary symptoms immediately post and 3 months post treatment in the Postural intervention (+ MT and biofeedback) group compared to conventional interventions alone (MT + biofeedback)
- There was NO significant improvement in sexual function across all interventions
- STRENGTHS and LIMITATIONS:
 - It was a randomized prospective controlled trial
 - There was significant improvement in perineal and suprapubic pain and urinary symptoms in participants (mostly in postural group)
 - Number of sessions: 1x10 weeks with NO adverse side effects from treatments
 - High HEP adherence during treatment and follow up (Postural group= 100%, TENS and conventional= 63.6%)
 - **Limitations:** Small sample size with decreased participant participation (started 32, ended 23)
 - There needs to be a longer follow up period
 - The home exercise program and description of interventions is not specific or categorized other than stating they are “postural exercises” and “relaxation techniques”

Conclusion and Clinical Application:

- Conventional treatments of MT and biofeedback can yield better outcomes in perineal and suprapubic pain and urinary symptoms when combined with postural exercises
- There is better HEP adherence and long term carry over of positive results of treatment with practice of postural exercises
- Research supports the use of TENS and postural exercises for management of chronic pain conditions, and now it shows some support to utilize in patients with BPS (in conjunction with MT and biofeedback)

Discussion points from the call:

- It is important to use a multimodal approach to treating these patients for longer lasting improvement and true change in symptoms
- Postural exercises and lumbopelvic mobility interventions such as happy baby, child’s pose, and figure-4 stretch are a great way to elicit pelvic floor muscle opening and relaxation.

Other References: optional

1. FitzGerald MP, Payne CK, Lukacz ES, Yang CC, Peters KM, Chai TC, et al. Randomized multicenter clinical trial of myofascial physical therapy in women with interstitial cystitis/painful bladder syndrome and pelvic floor tenderness. J Urol. 2012; 187:2113-8.