Editorial

Tibial nerve stimulation and physical therapy for pelvic organ dysfunction: a new horizon of professionalization

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1. Introduction:

Tibial nerve stimulation (TNS) is one of the recently emerging therapeutic techniques used extensively by a range of professionals across a variety of professional disciplines. The objective of this editorial was to provide an overview of literature on physiological and therapeutic effects of tibial nerve stimulation in management of pelvic organ dysfunction.

2. Neurophysiological effects of tibial nerve stimulation:

Neuromodulatory effects of TNS include increased brain activity,\(^1\) with both magnetic and electrical recordings demonstrating a series of oscillatory patterns consisting of four peaks (two positive and two negative) occurring between 40 and 100 msec, and selective activation of the somatosensory cortex.\(^2\)

Hence the mechanisms of its therapeutic efficacy should be attributed to central/ cortical rather than peripheral/ local.

3. Evidence for tibial nerve stimulation for pelvic organ disorders:

Biemans and van Balken\(^3\) found seven studies including five RCTs and concluded that TNS was an effective intervention for controlling symptoms, pain, and QoL measures of overactive bladder, faecal incontinence and chronic pelvic pain.

3.1. Tibial nerve stimulation for bladder dysfunction:

Moossdorf-Steinhauser and Berghmans\(^4\) identified four RCTs and six prospective observational cohort studies in their systematic review and found strong evidence for efficacy of TNS versus sham treatment in overactive bladder syndrome (OBS).

Burton et al\(^5\) reviewed ten non-randomized prospective studies in their meta-analysis and found a pooled subjective success rate of 61.4% and objective success rate of 60.6%, suggesting significant improvement in symptoms of OBS.

Levin et al\(^6\) pooled the data of four studies in their meta-analysis and found a success rate of 54-93% for PTNS in women with OBS.

3.2. Tibial nerve stimulation for bowel dysfunction:

Thomas et al\(^7\) identified 13 studies in their systematic review found that TNS improved fecal incontinence with a symptom improvement of >50% in episodes ranging from 63-82% of patients.

Findlay and Maxwell-Armstrong\(^6\) reviewed eight studies and found primary...
endpoint success rates from 30-83.3% in patients with faecal incontinence of variable etiology.

3.3. Tibial nerve stimulation for chronic pelvic pain:
Van Balken et al.\(^9\) evaluated 33 patients with chronic pelvic pain in a prospective multicenter trial and found 42% subjective response and significant overall improvements in quality of life and total pain intensity.

3.4. Tibial nerve stimulation for sexual dysfunction:
Van Balken et al.\(^10\) studied 121 patients with an overactive bladder, chronic pelvic pain or non-obstructive retention who presented with sexual dysfunction and treated with PTNS, found significant improvements in overall sexual satisfaction, libido and sexual frequency.

4. Conclusion:
TNS was shown to be effective for bladder, bowel, pain and sexual dysfunctions of the pelvic organs in many studies which warrant future high quality trials in field of physical therapy practice, education, research and administration.

5. Implications for Journal of Physical Therapy (JPT):
JPT welcomes manuscripts on application of TNS and comparison with other conservative treatment methods for pelvic organ disorders, and further the horizon of professionalization-based evidence.

CONFLICTS OF INTEREST:
None identified and/or declared.

REFERENCES: