

EFFECT OF TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION PLUS LOW-INTENSITY SHOCK WAVES THERAPY IN WOMEN WITH CHRONIC PELVIC PAIN

Solano Sanchez S¹, Maldonado Miranda E¹
 1. HOSPITAL ANGELES ACOXPA

HYPOTHESIS / AIMS OF STUDY

Chronic pelvic pain is characterized by persistent pain lasting longer than 6 months or recurrent episodes of abdominal/pelvic pain, hypersensitivity or discomfort often associated with elimination changes, and sexual dysfunction often in the absence of organic etiology (1). The prevalence on women is about 14% who experience chronic pelvic pain at least for one time during their life.

The chronic pelvic pain affects the quality of life of the women who suffers it, and the current treatments offer limited effectiveness. Low-intensity shockwave therapy has been used as a clinical treatment modality in many types of urological diseases (2).

- This study is clinical, not surgical and the category is pelvic pain syndromes.
- The hypothesis is: Women with chronic pelvic pain will improve more than 70% after the transcutaneous nerve electrostimulation plus low-intensity shock waves therapy.
- The objective of the study is to determine if in these women with chronic pelvic pain, the use of transcutaneous nerve electrostimulation plus low-intensity shock waves therapy is an effective treatment.

STUDY DESIGN, MATERIALS AND METHODS

An intragroup Clinical trial was launched inside hospital facilities. It included all women who entered the private consultation of Urogynecology who met the selection criteria. The inclusion criteria: Women with chronic pelvic pain history refractory to previous treatment and who agree to participate. Exclusion criteria: Those with neurological disease history, pregnancy, pelvic organ prolapse equal to or greater than stage III, uterine and/or adnexal pathology. Elimination criteria: Incomplete information.

The sample size was estimated with the technique for analytical studies in which the T-test is used to compare the means of continuous variables between groups, attempted to detect an intragroup difference of 60%. In this way, an effect magnitude of 2.64 was calculated; standardized effect size of 1.05; one-sided alpha of 0.025 and beta of 0.20. The required sample size was seventeen women. This project received the approval of the ethics and research committee. Patients have informed consent. No disclosures and funding were received.

All women underwent a complete medical history and urogynecological physical examination. It was evaluated the anatomical points established by the POP-Q system determining the degree of pelvic organ prolapse; ultrasound was performed with multifrequency endovaginal transducer; urodynamics evaluation to investigate the function of the lower urinary tract with Laborie Goby Urodynamics System. All women received pelvic floor rehabilitation program consisting of twelve sessions. One a week of 45 minutes each one with transcutaneous electrical nerve stimulation (TENS) technique applied with perineal patch using Laborie Urostym and Low Intensity Shock Wave Therapy administering the protocol in an abdominal approach, above the pubic bone to receive a total of 1000 shock waves per session. This last protocol consists in four sessions (1 per week); 3 weeks off and four additional sessions using Medispec ED-1000. Pain was evaluated before and after treatment with "Visual analog scale."

RESULTS

Twenty-three women with a history of chronic pelvic pain syndrome were included. Of these, four were excluded (3 due to gynecological pathology and one due to neurological damage). In the end, nineteen patients were analyzed. The sample was completed. Pelvic pain was assessed using "Visual Analogue Scale" before and after treatment. The demographic characteristics (mean/range) were Age: 47 years (26-77); evolution time: 7 years (1-40); pregnancies: 2 (0-4). The main urodynamic findings were normal

studies (26%); Bladder outlet obstruction/Dysfunctional voiding (53%); Idiopathic (primary) detrusor overactivity (16%); Urodynamic stress incontinence (5%).

INTERPRETATION OF RESULTS

Pain was evaluated before and after treatment with "Visual analog scale." The assessment of pain in women with chronic pelvic pain before and after treatment was analyzed with T-test for paired samples as well as a General Linear Model (SPSS statistical program, license 2021). Before the treatment, the mean of pain was 9.16 points and after the treatment was 1.7 points. This difference, before and after intragroup treatment, is statistically significant.

CONCLUDING MESSAGE

This is the first research in the world where chronic pelvic pain in women is treated with transcutaneous electrical nerve stimulation plus low-intensity shock waves therapy. The treatment in women with chronic pelvic pain is effective. Low-intensity shock waves therapy is a promising treatment in the urogynecological area, understanding that we need more time and studies. In principle, it will be an important treatment in pelvic floor dysfunction.

FIGURE 1

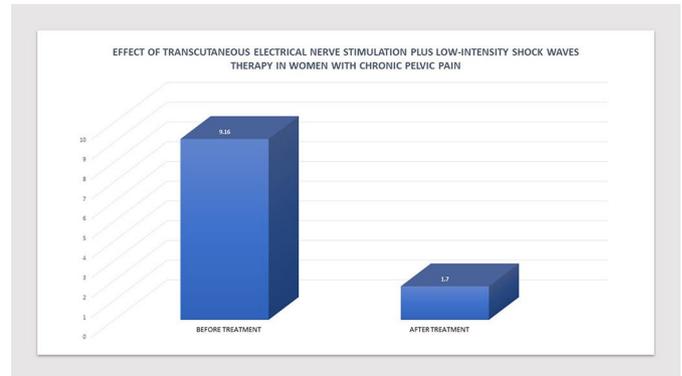
EFFECT OF TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION PLUS LOW-INTENSITY SHOCK WAVES THERAPY IN WOMEN WITH CHRONIC PELVIC PAIN

| Chronic pelvic pain (N=19) | Before treatment | After treatment | P value |
|----------------------------|------------------|-----------------|---------|
| Visual Analogue Scale | mean | mean | <0.001 |
| | 9.16 (1.1) | 1.7 (1.5) | |

T-test for paired samples

EFFECT OF TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION PLUS LOW-INTENSITY SHOCK WAVES THERAPY IN WOMEN WITH CHRONIC PELVIC PAIN

FIGURE 2



EFFECT OF TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION PLUS LOW-INTENSITY SHOCK WAVES THERAPY IN WOMEN WITH CHRONIC PELVIC PAIN

REFERENCES

1. Doggweiler, R., Whitmore, K.E., Meijlink, J.M., Drake, M.J., Frawley, H., Nordling, J., Hanno, P., Fraser, M.O., Homma, Y., Garrido, G., Gomes, M.J., Elneil, S., van de Merwe, J.P., Lin, A.T. and Tomoe, H. (2017), A standard for terminology in chronic pelvic pain syndromes: A report from the chronic pelvic pain working group of the international continence society. *Neurourol. Urodynam.*, 36: 984-1008. <https://doi.org/10.1002/nau.23072>
2. Lu JH, Chueh KS, Chuang SM, Wu YH, Lin KL, Long CY, Lee YC, Shen MC, Sun TW, Juan YS. Low Intensity Extracorporeal Shock Wave Therapy as a Potential Treatment for Overactive Bladder Syndrome. *Biology (Basel)*. 2021 Jun 16;10(6):540. doi: 10.3390/biology10060540. PMID: 34208659; PMCID: PMC8235660.

Funding None **Clinical Trial** No **Subjects** Human **Ethics Committee**
COMITE DE INVESTIGACION DEL HOSPITAL ANGELES ACOXPA **Helsinki**
Yes **Informed Consent** Yes

Continence 2S2 (2022) 100456
doi: 10.1016/j.cont.2022.100456