

DOI: <http://dx.doi.org/10.18203/2320-1770.ijrcog20202562>

Original Research Article

Effectiveness of vaginal analgesic electrostimulation versus sacral electroacupuncture in chronic pelvic pain of myofascial origin

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Received: 02 June 2020

Accepted: 09 June 2020

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ABSTRACT

Background: Chronic pelvic pain (CPP) of myofascial origin is a condition that is difficult to control and with great repercussion on the quality of life for women who suffer from it. This study objective was to compare the effectiveness of two treatments for the management of this pathology; vaginal analgesic electrostimulation (VES) versus sacral electroacupuncture (EAS).

Methods: Quasi-experimental comparative study of two treatments in patients with myofascial CPP. The sample was made up of women who presented this condition during the period 2016 to 2019. The main objective was to assess the effectiveness of the treatments in comparison in terms of the decrease in the VAS score, the secondary ones were: To know the effectiveness of the VES for pain chronic pelvic myofascial (MFPP), the effectiveness of EA for the same condition, complications of therapies, main urological dysfunctions and other chronic pelvic pain associated with myofascial CPP.

Results: Thirteen thousand patient files were reviewed, of which 47 were diagnosed with myofascial CPP, with 38 patients eligible for our study. The VES was more effective than the EAS in decreasing the VAS in the twelfth session from 1.36 versus 2.62 p .001. Both therapies were effective for the management of myofascial DCP as they decreased the VAS score to more than 60% of the initial VAS. Vulvodynia (34%), mixed urinary incontinence (32%), and voiding symptoms (26%) were other pelvic floor dysfunctions that presented concomitantly to the MFPP.

Conclusions: In patients with myofascial CPP, vaginal VES is better than AD for the treatment of this condition.

Keywords: Chronic pelvic pain, Electroacupuncture sacral, Myofascial pelvic pain, Vaginal electrical stimulation, Visual analogue scale

INTRODUCTION

Chronic pelvic pain is characterized by the presence of the symptom for more than 6 months with recurrent episodes of abdominal, pelvic pain, hypersensitivity, or sexual dysfunction in the absence of demonstrable organic pathology.¹ One of the causes of CPP is gynecological, the myofascial being the most frequent.²

The estimated prevalence for myofascial syndrome as a cause of chronic pelvic pain is 9-24%.^{3,4} Patients with this medical condition have other pelvic floor dysfunctions such as: lower urinary tract, sexual, or rectal symptoms.^{5,6}

The diagnosis of this disease is still in the process of standardization, which is why this disease is frequently

underdiagnosed, causing patients to undergo multiple studies as well as those assessed by various specialists.⁷ The presence of painful points when exploring the muscles of the pelvic floor together with a detailed medical history allows the identification of this disease.⁸⁻¹⁰ There are several treatment modalities, it is known that multimodal and interdisciplinary management are more effective than monomodal management, however relapse is frequent in this group of patients.¹¹

The first stage of treatment is the modification of lifestyle, awareness of the chronicity of the disease and its behaviour, the intervention of other doctors such as urologists, gynaecologists, Colo proctologists, algologists, psychology, acupuncturist psychiatry, among others, the second stage corresponds to the pharmacological management and these can be from the most basic such as non-steroidal anti-inflammatory drugs, to centrally acting analgesics, however the adverse effects of some medications affect the quality of life of the patients.¹²

The third stage is analgesic neuromodulation by any of its routes, trigger point infiltration with anaesthetics or botox, the fourth stage represented by implanted neuromodulators or pain medicine management such as deposit pumps. In general, the management of these patients is individualized and mono invasive treatments are preferred, which resolve the functional complications of pelvic floor dysfunction and have the least adverse effects.¹³

Currently there is no gold standard for the treatment of chronic myofascial pelvic pain, although there is a large body of evidence on the use of analgesic neuromodulation in acute or chronic pain, they are therapies that are low risk and with few adverse effects, so far there are no agreed parameters of the electrostimulation nor which is the best way that offers better results.

Therefore, authors decided to carry out this research with the primary objective of knowing if vaginal electrostimulation is more effective than sacral electroacupuncture in the management of chronic myofascial pelvic pain. As secondary objectives were: To know if the vaginal electrostimulation is effective for the CPP, in the same way if the EAS is effective for myofascial CPP, to identify the main complications associated to the treatments in comparison, as well as to know the urological dysfunctions, pelvic pain associated with myofascial CPP.

METHODS

A comparative quasi-experimental study of two treatments was performed in a group of patients diagnosed with chronic myofascial pelvic pain from the gynecological urology clinic of the National Medical Center "November 20" during the period from January

2016 to November 2019. The present investigation was considered low risk because it was retrospective and authorized by the Ethics Committee on identification with registration number 702.2019.

A search was made in the physical and electronic file of all the patients who attended the gynecological urology consultation during the period considered for the study. Patients with myofascial syndrome, older than 18 years and who have received vaginal analgesic electrostimulation or sacral electroacupuncture were included in this investigation. Patients with a history of pelvic oncological diseases, who had received pelvic radiotherapy, trauma or instrumentation of the lumbosacral spine were excluded, and those who did not complete the treatments or whose records were incomplete were eliminated.

Study intervention

The patients who were eligible for the investigation were divided according to the type of treatment they received: Group A made up of patients diagnosed with chronic myofascial pelvic pain and who had been managed with the following scheme: Twelve analgesic therapy sessions using vaginal cone, at mid-high frequencies with the intellect advanced combo equipment from the brand chattanooga intellect advance, 12 sessions 2 times a week.

Group B represented by records of patients with the aforementioned pathology who have been managed in this clinic based on twelve sessions of sacral electrostimulation at the S3 and S4 level bilaterally with the Hwato model SDZ II B team at frequencies medium and high, 12 sessions 2 times a week.

All the patients included in the study, according to information established in the clinical record, firstly had painful trigger points with dexamethasone (8 mg/2 ml) and 2% lidocaine (20 mg/1 ml), in a 1:1 ratio. to subsequently receive any of the two therapies described above. To evaluate the effectiveness of both treatments, the initial EVA score without treatment, sixth and twelfth session, was analyzed, first among the groups in comparison and later intragroup. Likewise, the complications of the treatments, urological dysfunctions and chronic pelvic pain associated with myofascial CPP were analyzed.

Processing and statistical analysis

Data was entered and analyzed with the SPSS statistics for windows statistical package, version 24.0; IBM, Armonk, NY, USA.

For the demographic variables of the study population, means with standard deviations were calculated for continuous data, normally distributed, and frequencies with percentages for categorical data.

The comparison between the treatments to establish which is more effective when presenting a greater decrease in the VAS score was performed using the student t-test for independent samples and to find out if the treatments are independently effective for the treatment of chronic myofascial pelvic pain. using the student t-test for related samples. A p-value of less than 0.05 was considered a threshold for statistical significance.

Complications of treatments and urological dysfunctions of chronic pelvic pain associated with myofascial CPP were reported in percentages.

RESULTS

Authors reviewed 13834 patient files that attended the gynecological urology clinic consultation from January 1st, 2016 to November 1st, 2019, identifying 47 patients with chronic myofascial pelvic pain of which 9 were excluded, being eligible for the Research 38 patients which were divided into two groups according to the treatment they received Figure 1.

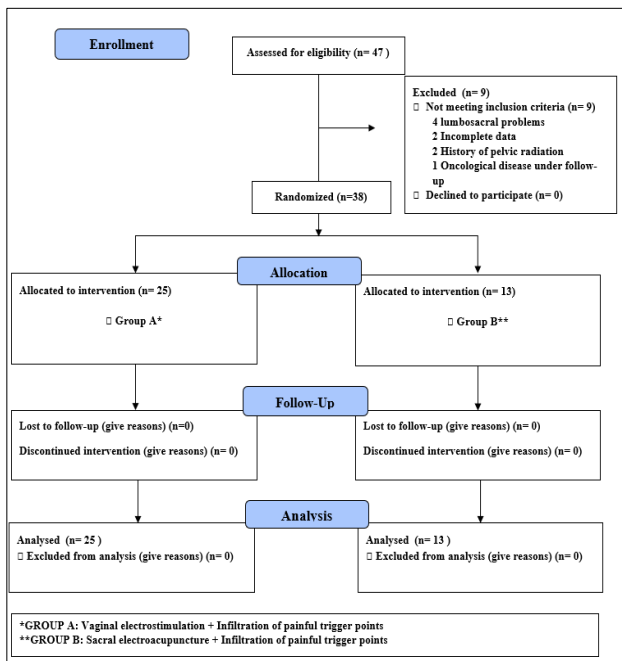


Figure 1: Study design.

Table 1 shows the demographic characteristics of the population in the study, the average age for Group A was 54.6±6.6 years, body mass index of 26.2±2.20, 24% were diabetic and 20% had some rheumatologic infertility. Group B the average age was 54.7±6.30, body mass index of 24.14±2.23, 39% were diabetic, 8% stated they had some rheumatologic disease.

In relation to the first objective of the investigation of knowing which of the treatments is more effective for the management of chronic myofascial pelvic pain, authors

found that both were effective at the sixth session since there was no significant difference between the average EVA scores (3.84 versus 3.77 p=0.76). However, at the twelfth session, the analgesic electrostimulation showed a greater decrease in the VAS score compared to the electroacupuncture group (1.36 versus 2.62 p=0.001) (Table 2).

Table 1: Demographic characteristics of the study population.

Characteristics	Group A* (n=25)	Group B** (n=13)
Age	54.7±6.62	54.7±6.30
BMI	26.02±2.20	24.14±2.23
Births		
≤2	25 (100%)	8 (61%)
≥3	0 (0%)	5 (59%)
Diabetes		
Without diabetes	19 (76%)	8 (61%)
<10 years with diabetes	3 (12%)	4 (31%)
> 10 years with diabetes	3 (12%)	1 (8%)
Rheumatologic diseases		
Yes	5 (20%)	2 (15%)
No	20 (70%)	11 (85%)
Neurological diseases		
Yes	2 (8%)	1 (8%)
No	23 (92%)	12 (92%)
Sexual abuse		
Yes	2 (8%)	1 (8%)
No	23 (92%)	12 (92%)
Follow-up by psychiatry		
Yes	19 (76%)	8 (62%)
No	6 (24%)	5 (38%)

*Group A: vaginal electrostimulation + infiltration of painful trigger points, **Group B: sacral electroacupuncture + infiltration of painful trigger points.

Table 3 shows that vaginal electrostimulation as a treatment for chronic myofascial pelvic pain is effective by presenting an average decrease of 7.4 points on the analogous pain scale at the end of the twelfth session.

Sacral electroacupuncture was also effective in managing this condition by decreasing the analogous pain scale by 6.3 points at the end of the twelfth session Table 4.

Table 5 shows the urological changes associated with myofascial CPC, with mixed urinary incontinence being the most frequent (32%), symptoms of emptying (26%) and recurrent urinary tract infection (34%). Vulvodinia (34%) was the most frequently associated chronic pelvic pain, followed by anal pain (10%). Lastly, the complications associated with the procedures in comparison only presented one in the group of vaginal electrostimulations corresponding to a vaginal infection which was treated pharmacologically and did not require discontinuation of treatment.

Table 2: Comparison of vaginal analgesic electrostimulation versus sacral electroacupuncture in terms of VAS decrease*.

VAS per session	Treatment group	n	VAS average	Mean difference	IC 95%	t	p
Initial VAS	Group A-VES**	25	8.76	-0.24	-0.78 0.3	-0.887	0.96
	Group B-EAS***	13	9				
VAS 6 th session	Group A-VES	25	3.84	0.071	-0.41 0.55	0.29	0.084
	Group B-EAS	13	3.77				
VAS 12 th session	Group A-VES	25	1.36	-1.25	-1.95 -0.55	-3.620	0.003
	Group B-EAS	13	2.62				

*VAS: analogous pain scale, **VES: vaginal analgesic electrostimulation, ***EAS: sacral electroacupuncture.

Table 3: Average score of initial, sixth and twelfth session VAS in patients with chronic myofascial pelvic pain treated with vaginal analgesic electrostimulation (Group A).

VAS per session	n	VAS average	Dev. standard	Pairing difference	IC 95%	t	gl	p
VAS * initial	25	8.76	0.72	4.92	4.65 5.18	38.42	24	0.00
VAS 6 th session	25	3.84	0.62					
VAS 12 th session	25	1.36	0.63	2.48	2.08 2.87	12.88	24	0.00
Initial VAS-VAS 12 th session				7.4	0 7.81	37	24	0.00

VAS*- Analog visual pain scale.

Table 4: Average score of initial, sixth and twelfth session VAS in patients with chronic myofascial pelvic pain treated with sacral electroacupuncture (Group B).

VAS per session	n	VAS average	Des. standard	Pairing difference	IC 95%	t	gl	p
VAS * initial	13	9	0.91	5.23	4.52 5.93	16.17	12	0.00
VAS 6 th session	13	3.77	0.83					
VAS 12 th session	13	2.62	1.5	1.15	0.34 1.96	3.09	12	0.009
Initial VAS-VAS 12 th session				6.38	5.51 7.25	15.92	12	0.00

VAS*- Analog visual pain scale.

Table 5: Pelvic floor dysfunctions associated with chronic myofascial pelvic pain.

Urological disorders		
	n	Frequency Percentage
Stress urinary incontinence	38	5 14%
Urinary urge incontinence	38	6 16%
Mixed urinary incontinence	38	12 32%
Without incontinence	38	15 38%
Emptying symptoms	38	10 26%
No symptoms of emptying	38	28 74%
Recurrent urinary infection	38	13 34%
Other chronic pelvic pain associated with myofascial CPP		
Vulvodynia	38	13 34%
Anal pain	38	4 10%
Bladder pain	38	3 8%
Coexistence of 2 causes of DCP	38	3 8%
Without coexistence	38	15 40%

DISCUSSION

Myofascial syndrome as a cause of chronic pelvic pain, a poorly identified clinical entity with great clinical

repercussion, frequently associated with other pelvic floor dysfunctions.¹⁴ There are several treatment modalities, however a multidisciplinary and multimodal approach are those that offer better clinical results, even

so the recurrence of symptoms is the norm in this group of patients.¹⁵

In this research, authors demonstrated that vaginal electrostimulation is better than sacral electroacupuncture for the management of myofascial CPP, despite the fact that both treatments are effective for the management of this group of patients. Authors also document that myofascial CPP is associated with other pelvic floor dysfunctions such as urological disorders, anorectal disorders and other chronic pelvic pain such as vulvodynia.

One of the first studies of vaginal electrostimulation was carried out by Nappi E et al, who recruited 29 patients with dyspareunia and vaginismus, underwent 10 sessions of VES one session per week, with parameters of: biphasic current, frequency 1-4 Hz, pulse width 0.1-0.3 ms and intensity between 0-70 mA. They showed significant improvement in the VAS, achieving that the vast majority of patients recovered sexual activity, however their follow-up period was very short.¹⁶

Bernardes et al, compared the use of vaginal electrostimulation against placebo in 26 patients with chronic pelvic pain, documenting a clinical improvement of 80% of the groups that underwent VES against 56.5% of placebo.¹⁷

Murina F et al, those who conducted a study in 40 patients with vestibulodynia, and evaluated the efficacy of VAS against placebo. EAV parameters were: twice a week at frequencies of 10-50 mHz to complete 20 sessions. The result was a decrease in the EVA 2.1 versus 5.6, like the previously described studies, its follow-up period was short of 3 months.¹⁸

Serdar A, and collaborators carried out a study in patients with sexual dysfunction in order to evaluate the effectiveness of vaginal analgesic electrostimulation. They included 42 women with sexual dysfunction, 24 of whom underwent vaginal electrostimulation and 18 the placebo group. The electrostimulation parameters were: alternating current, frequency 50 Hz, during a 5-second work cycle followed by a 5-second rest, a 20-minute session weekly for 8 sessions. The results showed that the patients undergoing analgesic electrostimulation showed improvement in excitement, desire, orgasm, satisfaction, and the pelvic musculature showed greater strength, resistance, however, pain did not improve with this treatment.¹⁹

Tae J et al, carried out a study in 12 patients with vaginismus who were treated with vaginal electrostimulation plus biofeedback. A weekly session of 15 minutes, for 12 weeks, with the following parameters: 2 seconds of stimulation for 4 of rest, frequency 50 HZ, pulse width 2 ms, power 10 to 100 mA. Biofeedback therapy was carried out concomitantly with

electrostimulation. At the end of the treatment, the 12 patients achieved satisfactory sexual activity.²⁰

In relation to electroacupuncture, Aranha M, carried out a study with the objective of evaluating the effect of electroacupuncture (EA) and acupuncture (AC) for myofascial trapezius pain. They included 70 patients with myofascial trapezius muscle pain of six months evolution, were treated based on eight sessions of the treatments in comparison and noted a reduction in general pain in both groups, however, EA was better than AC for the relief of local pain.²¹

Petrou A, presented a series of two clinical cases of chronic pelvic pain of neuropathic origin. The first case was an elderly male patient who presented with CPP who did not respond to conventional medical treatment or acupuncture and requested discontinuation of treatment. Electroacupuncture was applied as a last resort therapy and proved to be very effective in reducing pelvic pain and allowed a significant reduction in antidepressant medication doses.²²

A second case concerns a young patient who developed chronic pelvic pain after delivery. Several treatments were unsuccessful in relieving her pain. Eventually she responded to electroacupuncture at multiple trigger points on the abdominal wall. The author demonstrated that electroacupuncture is effective in successfully suppressing chronic neuropathic pelvic pain.²²

Finally, myofascial CPP, given the sustained contraction of the pelvic floor muscles, it is common to find functional urological, rectal, sexual disorders, and the presence of other pelvic pain, among others. According to the evidence that exists for the management of chronic myofascial pelvic pain in relation to vaginal analgesic electrostimulation and sacral electroacupuncture, the results agree with those found in this research.

Limitations of the study was, given the size of the sample, the power of the study decreases, future prospective investigations with a greater number of patients are required to better determine the scope of vaginal electrostimulation and sacral electroacupuncture.

CONCLUSION

Chronic myofascial pelvic pain of the pelvic floor in women is a pathology that affects the quality of life of this study patients, as previously mentioned, underestimated in its diagnosis and with poor clinical response to established treatments, which until now have not been consensual therefore there is no gold standard for its management.

Based on the results, authors conclude that: In patients with chronic pelvic floor myofascial pelvic pain, multimodal treatment of vaginal analgesic electrostimulation plus painful trigger point infiltration is

more effective than sacral electroacupuncture plus trigger point infiltration. Vaginal analgesic electrostimulation plus trigger point infiltration is effective in the treatment of chronic pelvic floor myofascial pelvic pain. Sacral electroacupuncture plus trigger point infiltration is effective for the treatment of chronic pelvic floor myofascial pelvic pain. Patients with chronic myofascial pelvic pain frequently experience other pelvic dysfunctions such as urinary incontinence, voiding symptoms, and other causes of pain such as vulvodynia.

Finally, this study leaves open lines of future research, in relation to the use of electroacupuncture and vaginal analgesic electrostimulation in myofascial syndrome but with a prospective approach, in order to determine which parameters offer better results, as well as increase the number of participants in order to have better study impact.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Ochoa CB, Reyes GG, Marin CMM, Quispe VBA, Gonzalez AG, Velázquez RH, et al. Effectiveness of vaginal analgesic electrostimulation versus sacral electroacupuncture in chronic pelvic pain of myofascial origin. *Int J Reprod Contracept Obstet Gynecol* 2020;9:2686-91.