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RESEARCH ARTICLE

VAGINAL ELECTROSTIMULATION THERAPY IN THE SYMPTOMS OF WOMEN WITHOVERACTIVE BLADDER

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Abstract

Objective: To describe the results of patients with overactive bladder managed by means of vaginal electrostimulation.

Material and Methods: A descriptive study was carried out using as a basisinformation on the file of all patients treated for overactive bladderwith vaginal electrostimulation, from the period from January of 2014 to January of 2019. The therapy consisted on the application of vaginal electrostimulation for 12 30 minutes sessions. A decrease in urination frequency was determined (7.67 vs 647, p=0.001),in urinary urgency (2.07 vs 1.53, p= 0.001)and in nocturia (1.6 vs 1.02 p= 0.001). The multivariate analysis allowed us to observethat in the case of nocturia, the history of previous pelvic surgery and diseasehad a positive interaction (Previous pelvic surgery, 9.07 p=0.008and Chronic disease, 5.54 P=0.047).

Discussion: The use of electrostimulation for the treatment of overactive bladder in women presents favorable results, but we must consider the history of previous surgery and comorbidities of the patients in their management.

Introduction:-

Overactive bladder (OAB) is a condition that occurs in a largeproportion of the population, affecting between 11.8 and 22%. It affects mainly women and people over 65 years of age.(Verdejo-Bravo, Brenes-Bermúdez, Valverde-Moyar, Alcántara-Montero, & Pérez-León, 2015). This condition significantly affects the quality of life in people and is barelyattended in primary medical services consultations.(Ellsworth, Brunton, Wein, & Rovner, 2009)(Macias-Vera, Velazquez-Castellanos, & Godoy-Rodriguez, 2016)

The factors that influence the low percentage of attention of thiscondition are different, which combined with the fact that OAB does not have a specific and well clarified etiology, makes an early and appropriate management of the patient required.

There are several therapeutic approaches for OAB. Behavioral changes andreeducation are the first line of action. The use of antimuscarinics is asecond way to handle. A third way to manage the patientconsists inneuromodulation, for example, inhibiting detrusor's activity byposterior tibial nerve treatment.(Bellette, et al., 2009)(Barrera, et al., 2014).

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Management with neuromodulation is mainly used when the use of thefirst and secondtype of treatmenthave not been successful.(Macias-Vera, Velazquez-Castellanos, & Godoy-Rodriguez, 2016)

Neuromodulation consists primarily of peripherals nerve stimulation either by surface electrodes or needles. The desired effect is the stimulation of the tibial nerve for the inhibition of the detrusor.(Macias-Vera, Velazquez-Castellanos, & Godoy-Rodriguez, 2016)

There are several electrostimulation devices, among them are intravaginal devicesthat offer alternatives to manage, demonstrating improvements in theintervals, nocturia and incontinence.(Resplande, Gholami, Bruschini, & Srougi, 2003)(Rostaminia, Chang, Pincus, Sand, & Goldberg, 2019)

The objective of the present study is to describe the results of the vaginal electrostimulation therapy in women with overactive bladder symptoms.

All the files of the patients who received vaginal electrostimulation therapy between January 2014 to January 2019 at the Urogynecology service of the Naval Medical Center of Mexico were analyzed.

Included where all patients who completed the sessions of vaginal electrostimulation treatment and whom in their electronic record registered a prior consultation and a consultation after the chosen treatment that included a history of urogynecology, pelvic examination and questioning of the frequency of overactive bladder symptoms.

Results:-

45 patients were included, which were the total population attended in thespecified study period. The patients underwent 12 sessions of30 minutes every third day. From the review of the clinical records, it was possible todetermine that 60% of the patients presented some type of chronic ailment.

Within the important records, it was possible to determine that around the age of 53, the onset of symptoms of overactive bladder started presenting themselves (table No.1).

	Age	**Age at onset of OAB Symptoms**	**Instrumented Surgery**	**Pelvic Surgery**
History	64.2 ± 9.32	53.31± 7.84	17.8%	60%

Table No.1:- General history of patients diagnosed with Overactive Bladder.

In the case of obstetric-gynecological records, the median number of pregnancies allowed to observe a median of three gestations in the patients studied (tableNo. 2).

	Gestations	**Births**	**Abortions**	**C-Sections**
Gynecological Obstetrics History (median)	3	2	1	1

Table No.2:- Gynecological Obstetrics records of patients diagnosed with Overactive Bladder.

Within the surgical history, 17.8% of them had some instrumented delivery.

The values before and after the application of electrostimulation therapy where compared, finding significant decreases in each of the analysis variables.

In the case of urination frequency, this decrease was 15.64%. In the case of urinary urgency, this decreased by 26.08% and in the case of nocturia, these values decreased by 36.25%. (table No.3).

Variable	**Previous Value**	**Posterior Value**	**p**
Urination Frequency	7.67± 1.41	6.47 ± 0.87	**0.001**
Urinary Urgency	2.07 ± 1.01	1.53 ± 0.73	**0.001**
Nocturia	1.60 ± 0.81	1.02 ± 0.75	**0.001**

Table No.3:- Hypothesis test to determine the difference before and after electrostimulation therapy in patients with a Hyperactive Bladder diagnosis.

Regarding previous management, it was observed that 33.3% of the patients had taken medication during the application of their electrostimulation therapy.

Logistic regression was performed for the improvement of nocturia, urinary urgency andurination frequency. In the case of urinary urgency and frequency we could not findinteraction with the age variables or history of previous pelvic surgery, taking medications as treatment for overactive bladder, chronic disease or instrumental delivery, however, in the case of nocturia, the records of previous pelvic surgery and presence of chronic disease were significant (table No4).

Variables in the ecuation	Wald	Exp (B)	Significance
Age	0.576	0.971	0.44
Previous Pelvic Surgery	6.93	9.078	**0.008**
Chronic Disease	3.95	5.54	**0.047**

Table No.4:- Multivariate analysis for nocturia improvement in patients diagnoses with Overactive Bladder.

Discussion:-

The results presented allows us to observe that the use ofelectrostimulation for the treatment of OAB, improves several of the points thatrepresent important symptomatology in the quality of life of patients.

Decreased urinary frequency, nocturia, and urgency are consistent with otherstudies that have used electrostimulation as a treatment forpatients and even with studies that managed patients with therapycombined with electrostimulation..(Mendez, Chavez, & Campos, 2002)(Perez-Martinez, Vargas-Dias, & Cristobal-de-Leon-Jaen, 2013)(Sousa-Fraguas, Lastra-Barreira, & Blanco-Diaz, 2021)

The decrease found in the present study, despite being significant, is lower than that found in other studies where a 60% decrease of urinary frequency has been found. However, similar values were foundto those observed in nocturia and urinary urgency from other investigations. (Delgado, Siles, Toledo, & Duin, 2021) (Sousa-Fraguas, Lastra-Barreira, & Blanco-Diaz, 2021)

The most relevant finding of the study was the determination that there may existinteractions with other pathologies in patients, in this case the history ofpelvic surgery and the presence of chronic diseases modified significantly the improvement in nocturia results.

The effect of comorbidities on the patient is always an important consideration, since important modifications have been observed according to the typeof coexisting disease, both in its cause and in its possible outcomes. (Espuña-Pons, Castro-Díaz, Díaz-Cuervo, & Perez, 2012)

Vaginal electrostimulation therapy is a therapy that offers safety and benefits to patients and in the case, for example, of people with a history of pelvic surgeries, could result in safe handling.

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