95 - KINESIOTHERAPY AND ENDOVAGINAL ELECTRICAL STIMULATION IN THE TREATMENT OF WOMEN WITH STRESS URINARY INCONTINENCE AT MENOPAUSE

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Introduction:

According to the International Continence Society (2002), the Stress Urinary Incontinence (SUI) is defined as the complaint of involuntary urinary leakage by the urethra while exercising, sneezing or coughing. It is the form of urinary incontinence (IU) that presents greater prevalence, being responsible for 60% of all the cases of urinary incontinence in women. According to REIS *and cols* (2003), the urinary incontinence is, many times, misinterpreted as a natural part of aging. In an elderly woman, the reduction in the elasticity of the conjunctive tissue, the deficiency of estrogens and the consequences of previous gestations and childbirths result in weakness of the pelvic floor muscles and, then, in involuntary loss of urine (PICKLES, 1998). Some authors like CARRAMÃO *and cols* (2003), believe that the physiotherapy can strengthen the urethral sphincter control, when the probable cause of the urinary leakage is the dysfunction of the pelvic floor striated muscle. The hypertrophy of the fibers from the pelvic floor muscles can determine an increase of the urethral closure pressure and an improvement of the muscular support from the pelvic floor. The aim of this study was to present the results obtained by the physiotherapy treatment in menopausal women with stress urinary incontinence through the following resources: specific kinesiotherapy for the pelvic floor muscles and endovaginal electrical stimulation.

Materials and Methods

The data of this study were obtained through the Extension Project called "Physiotherapy Applied to the Urinary Incontinence", a partnership of CEFID/UDESC and a public maternity hospital from Florianopolis/SC, Brazil. The sample of this study was composed of 15 (fifteen) women sent to the physiotherapy service after going through a Clinical evaluation by the voluntary urogynecologist doctor of the project. As for the criterion of inclusion, it was selected patients who presented Stress Urinary Incontinence and, as for the criteria of exclusion, those patients that presented any characteristic of Mixed Urinary Incontinence or osteomuscular impairment that made it difficult to do the kinesiotherapy for the pelvic floor or that had any contraindication in the use of perineal electrical stimulation. The evaluation was performed through a file with personal data, current and former history of the SUI, besides a physical exam. The appointments with the patients were carried out twice a week, for 50 minutes each and, after 10 sessions, the reevaluation of the condition was established.

The techniques used were Electrical Stimulation (ES) and kinesiotherapy in all sessions. The electrical stimulator with 2 independent channels and a bipolar pulse sender with symmetrical compensation was used with width of pulse of 500 microseconds and f = 65Hz for fast fibers and width of pulse of 2 milliseconds and f = 20Hz for slow fibers, both for 12 minutes. The electrical therapy initiated with the patient lying and his legs resting on a small wedge, simulating the gynecological position. When the patient had already presented an objective improvement of the contraction, without using the parasite musculature (expository, abdominal and gluteus), the electrical therapy was carried out in the orthostatic position.

The Kinesiotherapy, always done after the ES and with contraction of the pelvic floor, was performed in several positions following the scale of difficulty: patient in dorsal decubitus with supported feet; abduction and external rotation of hip (frog position) with the feet supported by the wall and using shin pads of 500 grams; performing adduction and abduction of hip; lateral decubitus; bridge; seated with supported feet; seated with knees extended and, in a more advanced period of training, stood and crouched.

After 10 sessions, the patient was submitted to a reevaluation which focused on checking the Pelvic Floor Functional Evaluation (AFA), the use of daily protection and activities of urinary loss. In order to compare this variable and the average of daily protections exchange before and after the proposed treatment, it was performed the Wilcoxon test with a level of significance of 5%, through the program SPSS for Windows® version 13.

Presentation of the results

It was observed that the median age of the patients was 61,3 years (ranging from 50 to 75 years; DP = 8,69) in which 56.2% did hormonal replacement therapy. Only one patient presented diabetes mellitus, 52.8% presented systemic arterial hypertension, 19.8% were overweight, 33% considered themselves sedentary, 13.2% affirmed the existence of respiratory complaints and only one was smoker.

Regarding the sexual activity, 66% of the patients were sexually active and 30% of these presented dyspareunia, 20% lost urine during sexual intercourse and 10% had the desire of urinating while doing it.

As for the obstetric antecedents, it was obtained an average of 4,2 gestations and 3,8 natural childbirths and all of them had done, at least one time, the episiotomy. Regarding the urinary leakage, 52.8% affirmed that the symptoms had been initiated during the climacteric and in 39.6% of the cases there was a history of urinary incontinence in the family.

The median time that these patients took to look for attendance in order to solve the urinary leakage was of 8,5 years (raging from 2 months to 38 years; DP = 9,7). In 39,6% of the cases a previous treatment was carried out, in which 33.2% of them were pharmacologic treatment and 66.4% had the colpoperineoplasty as surgical treatment. No patient had done physical therapy previously. All the patients who had taken medicine didn't have an improvement in the urinary leakage and those that had undergone the surgical procedure reported that it returned in 5,3 years.

At the first strong desire of urinating, 52.8% of the patients made it to the toilet with difficulty, 39.6% made it without difficulty and only one couldn't make it.

As for the use of daily protection, 52.8% of the patients used this artifice to keep themselves dry, with an average of daily exchanges of 1,9. Only three patients changed the protection during the night.

During the evaluation, the patients were questioned as to the activities where the urinary leakage occurred. The activities that stood out were sneezing, laughing and coughing.

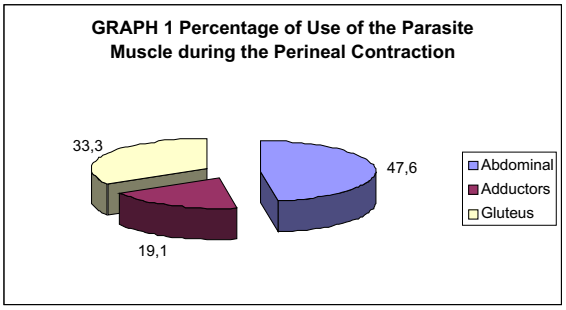
The amount of urine lost during these episodes described above was of a few drops for 52,8% of the patients, a spurt

for 39,6% and only one patient reported complete loss.

In the physical examination, it was observed that the ano-vulvar distance was smaller than 3 cm in 72,6% and the tonicity of the perineal tendon nucleus was normtonic in 59,9% of the cases and hypotonic in 39,6%. No patient presented hypertony on the region.

In regards to the genital distopies, 66.6% of the patients presented a level of prolapse, and 80% of these patients presented cystocele of level I and 20% of level II.

During the verbal command, 89.9% of the patients presented aknowledged contraction of the perineum; 86,6% did not perform movements of the sacro-iliac joint, while two patients carried out anteversion and another one, pelvic retroversion. Regarding the use of parasite muscle, the abdominal muscles were the most used during perineal contraction, as it is shown in GRAPHICAL 1.

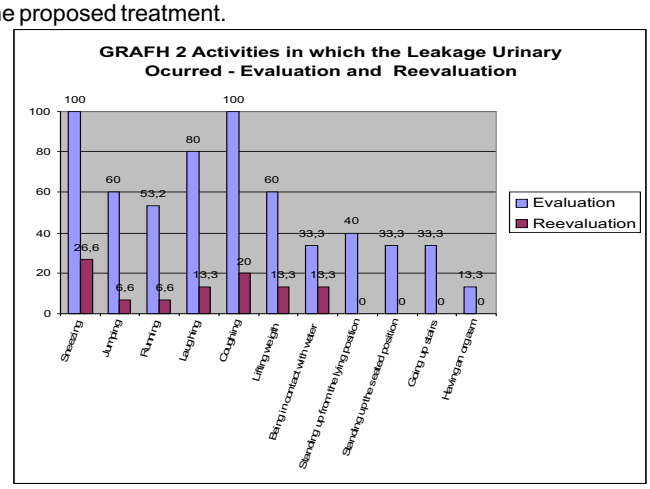


Finishing the physical examination, the average of the Pelvic floor Functional Evaluation by digital touch (AFA) according to MORENO (2003), was of 3,2, as it is presented in Table 1.

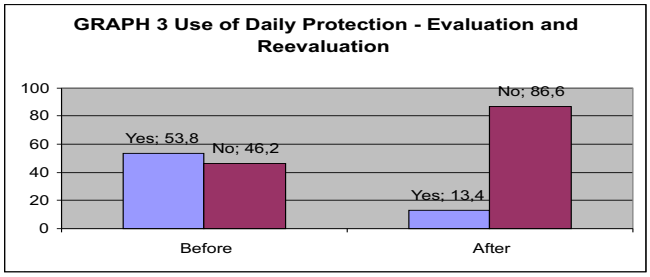
	TABLE 1: Test of the Anus Elevators Strength
0	Without objective and subjective perineal function, not even faced the touch
1	Without objective perineal function and weak subjective faced the touch
2	Objective perineal function not very present and weak sub jective faced the touch
3	Objective perineal function not very present and subjective does not show resistance faced the touch
4	Objective and subjective perineal function faced the touch, keeping against resistance for 5 seconds.
5	Objective and subjective perineal function faced the touch, keeping against resistance for more than 5 seconds.

Table1: Test of the Anus Elevators Strength - adapted from Moreno 2004.

After the application of the protocol of treatment described in the methodology, the patients went through a reevaluation. As it is observed in GRAPH 2, regarding the activities of urinary leakage, in situations like sneezing, jumping, running, laughing, coughing, standing up and being in contact with water, it kept occurring, however not so frequent. In activities like standing up from lain and seated positions, going up stairs and having an orgasm the urinary leakage wasn't reported anymore by the patients after the proposed treatment.



The use of daily protection has also decreased among the women, as shown in GRAPHICAL 3, as well as the average of exchanges that went from 1,9 to 0,2. This improvement was statistically significant according to the Wilcoxon test with a significance of 5% (p = 0,05).



In the Pelvic Floor Functional Evaluation (AFA), the test of power of the anus elevator muscles presented an increment from 3,2 to 4,7. According to the Wilcoxon test, the improvement was significant at the level of 5% of significance.

Discussion of the Results

In the last decades, with the increase of the population's life expectance, a woman spends about one third of her life in hypoestrogenism situation, suffering from its occasional consequences (SARTORI, *et al*, 1999).

It is evident that the hypoestrogenism affects the urinary tract, causing trophic changes that aggravate or unchain the SUI during the postmenopause (LEON, 2001). This way, the reduction of the conjunctive tissue's elasticity, the estrogen deficiency and the consequences of previous gestations and childbirths result in weakness of the pelvic floor muscles and, afterwards, in involuntary urinary leakage (PICKLES, 1998).

For GUARISI et al (2001), advanced age, white skin, obesity, vaginal childbirths, estrogen deficiency, conditions associated to the increase of the intra-abdominal pressure, smoking, collagen diseases, neuropathies and previous hysterectomy are factors of risk to the development of the SUI.

A pelvic floor with deficient or inadequate function is a relevant etiologic factor in the occurrence of the SUI. This way, many authors agree that the kinesiotherapy is an effective treatment for the stress urinary incontinence.

In a meta-analysis carried out to demonstrate the effectiveness of strengthening the pelvic floor muscles among women with stress urinary incontinence, an effective reduction in the episodes and in the amount of urinary leakage was observed when compared to another group that had not received training (CHOI *et al*, 2004).

The pelvic floor is composed of muscular fibers of slow contraction (or type I) and fast contraction (or type II), and 70% of them are of slow contraction and are responsible for the maintenance of the tonus and the 30% left are fibers of fast contraction and low resistance. In SUI, the fibers that are more attacked are the fast contraction ones. The voluntary contraction of the pelvic floor acts more specifically on fibers type II, making them become hypertrophic, increasing the power of perineal contraction (BERNARDES *et al*, 2000).

The endovaginal electrical stimulation has the intention of reestablishing the muscle and the nervous function (HERRMANN et al, 2003). It is able to rehabilitate the pelvic floor muscles, however bigger results are obtained if associated to other methods of conservative treatment.

Conclusion

Aging must not be considered a barrier for prescribing kinesiotherapy to elderly women with SUI. Instead, it is suggested that it should, more and more, be spread as a way of prevention.

The change in the paradigms of attendance in women who present themselves as menopausal is an integrant part of their rehabilitation, in which anatomical, psychological, privative and comfort aspects must be valued, the treatment must always look for reproducing the conditions where the losses occur.

The physiotherapy resources, said to be conservatives, are presented in this matter as a little invasive resolution and of easy access to these women, who are, many times, afraid of undergoing a surgical procedure. Through the conservative treatment of the dysfunction they are stimulated to get to know their bodies and the factors that cause the leakage, improving, this way, their corporal perception, the functions of the pelvic structures besides the behavior and habits related to the problem.

In this study the effectiveness of the conservative treatment was observed in menopausal women, making use of physical therapy resources that do not offer risks, rescuing, this way, their self-esteem and improving their health.

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KINESIOTHERAPY AND ENDOVAGINAL ELECTRICAL STIMULATION IN THE TREATMENT OF WOMEN WITH STRESS URINARY INCONTINENCE AT MENOPAUSE

ABSTRACT:

The aim of this study was to verify the effectiveness of the endovaginal electrical stimulation associated with the specific kinesiotherapy for the pelvic floor in menopausal women who presented stress urinary incontinence. The sample was composed of 15 women, at the median age of 61,3 years, who presented urinary loss due to small, average and great efforts. After applying the techniques, the results demonstrated the effectiveness of the conservative treatment, which was noticed by the improvement of the condition through quantifiable parameters, like the test of Anus Elevators Strength that had a significant improvement from 3,2 to 4.7 on average ($p = 0,05$). The average of use of daily protections also presented a significant reduction from 1,9 to 0,2 ($p = 0,05$), as well as the episodes of leakage in daily activities like sneezing, coughing, laughing and lifting weight.

KEYWORDS: Urinary Incontinence, Physiotherapy and Menopause

STIMULATION ÉLECTRIQUE DE KINESIOTHERAPY ET D'ENDOVAGINAL DANS LE TRAITEMENT DES FEMMES AVEC L'INCONTINENCE URINAIRE D'EFFORT À LA MÉNOPAUSE

RESUME:

Le but de cette étude était celui de vérifier l'efficacité de l'électrostimulation endovaginale associé à la cinesitherapie spécifique par le plancher pelvien entre les femmes ménopausées qui présentent incontinence urinaire d'effort. L'échantillon

représentatif était composé par 15 femmes, avec l'âge moyenne de 61,3 ans, qui présentait des pertes urinaires aux petits, moyen et grands efforts. Après l'application des techniques, les résultats démontraient l'efficacité du traitement pour conserver la région pelvienne. observé par l'amélioration des symptômes à travers des paramètres quantifiables comme le test de la force des élévateurs de l'anus (AFA) qui a eu une amélioration significative dans la moyenne de 3,2 à 4,7(p = 0,05). La moyenne d'utilisation des protèges slips a aussi présenté une réduction considérable de 1,9 à 0,2 (p = 0,05) ainsi que les épisodes des pertes pendant des activités quotidiennes, comme éternuer, tousser, rire et soulever du poids.

MOTS-CLE: Incontinence, Kinésitherapie, Menopause

CINESIOTERAPIA Y ELECTROESTIMULACIÓN ENDOVAGINAL EN EL TRATAMIENTO DE MUJERES CON INCONTINENCIA URINARIA POR ESFUERZO EN PERIODO DE MENOPAUSIA

RESUMEN:

El objetivo de este estudio fue verificar la eficacia de la electroestimulación endovaginal asociada a la cinesioterapia para el suelo pélvico en mujeres con menopausia que presentaron incontinencia urinaria por esfuerzo. La muestra fue compuesta de 15 mujeres, con edad media de 61,3 años, de las cuales presentaron pérdida de orina en pequeños, medianos y grandes esfuerzos. Después del uso de las técnicas, los resultados habían demostrado la eficacia del tratamiento conservador, observada en la mejora del cuadro con parámetros cuantificables , como la prueba de fuerza de los elevadores del ano (AFA) que tuvo una mejora significativa de su media de 3,2 para 4,7 (p = 0,05). La media de uso de protecciones diarias también presentó una reducción significativa de 1,9 para 0,2 (p = 0,05). Así como los episodios de la pérdida en actividades cotidianas como estornudar, toser, reír y levantar peso.

PALABRAS-LLAVE: incontinencia urinaria, fisioterapia, menopausia.

CINESIOTERAPIA E ELETROESTIMULAÇÃO ENDOVAGINAL NO TRATAMENTO DE MULHERES COM INCONTINÊNCIA URINÁRIA DE ESFORÇO NO PERÍODO MENOPAUSAL

RESUMO:

O objetivo desse estudo foi verificar a eficácia da eletroestimulação endovaginal associada a cinesioterapia específica para o assoalho pélvico em mulheres menopausadas que apresentavam incontinência urinária de esforço. A amostra foi composta de 15 mulheres, com idade média de 61,3 anos, que apresentavam perda urinária aos pequenos, médios e grandes esforços. Após a aplicação das técnicas, os resultados demonstraram a eficácia do tratamento conservador, observado na melhora do quadro através de parâmetros quantificáveis, como o teste de Força do Elevadores do Ânus (AFA) que teve uma melhora significativa na média de 3,2 para 4.7 (p = 0,05). A média do uso de proteções diárias também apresentou uma redução significativa de 1,9 para 0,2 (p = 0,05) assim como os episódios de perda em atividades cotidianas, como espirrar, tossir, rir e levantar peso.

PALAVRAS-CHAVE: Incontinência Urinária, Fisioterapia, Menopausa.