Opinion

Rehabilitation of pelvic floor disorders with electroporation: from pre menopause to post menopause

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Electroporation is a process that uses electrical impulses to increase the permeability of cell membranes, allowing greater penetration of therapeutic substances into tissues.1 This technology has been widely studied and applied in various fields of medicine, including pelvic floor rehabilitation. During menopause, the pelvic floor undergoes the resulting hormonal changes, and changes occur at the muscular level that modify its elasticity and strength. As a consequence of this new hormonal reality, combined with possible pregnancies, conditions of profound discomfort in women can result, such as urinary and fecal incontinence, uterine and bladder prolapse, vaginal dryness, vulvar and vaginal atrophy, and worsen pre-existing conditions such as dyspareunia and vulvodynia.2 Benefits of electroporation in rehabilitation include improved muscle contraction Using electroporation, locally applied medications can be absorbed more effectively into the tissues of the pelvic floor. This can improve the effectiveness of drug treatments aimed at reducing inflammation or pain; facilitated tissue regeneration.

Considering the precedent premises, the Obstetrical and Gynecological Divisions are preparing a technical study in order to verify the benefits of electroporation.[3]

The research project involves the approach of this technique to female patients, considering the pre-menopausal to the post-menopausal period. The proposed sample includes two groups, each consisting of 20 patients: both groups will be subjected to pharmacological treatment with the administration, based on the patient's needs, of hyaluronic acid and estrogens. The assignment of the placebo or the active group will be generated using the online tool https//www.random.org/lists, where numbers from 1 to 40 will be assigned to each group occurrence.

Cases group will receive therapy with the help of the electroporator, as randomly assigned.

Time 0: the treatment will take place according to the protocol, with an initial anamnestic visit and clinical interview and with the administration of a questionnaire, to evaluate the general picture of the symptoms and how much they affect the woman's life, and then a diagnosis of any disorder will be made to choose the most suitable treatment. The process consists of carrying out 2 sessions 2-3 days apart in the first week. In the following 4 weeks the woman will undergo 1 session per week, with evaluation and administration of a questionnaire, and subsequently a follow-up visit will be carried out at 3 months. The control group will undergo the same diagnostic iter and follow-up procedure but without the aid of the electroporator.

Time 1: at the end of the 5th week a second check-up will be carried out for both groups.

Time 2: 3 months after the end of the treatment a third follow-up check-up will be carried out for both groups (Table 1).

Table 1 Time 0, 1 and 2 for the actions to follow in both groups

	Time 0	Time 1	Time 2
Case group (n=20)	Initial anamnestic visit and clinical interview and with the administration of a questionnaire.	Two sessions of drug administration (estrogens and hyaluronic acid) via the vagina with electroporation, 3 days apart in the first week. In the following 4 weeks the woman will undergo 1 session per week. At the end of the 5 weeks a second check-up will be carried out.	Three months after the end of the treatment a third follow-up check-up will be carried out, to observe and assess the advancements that have occurred with the electroporation.
Control group (n=20)	Initial anamnestic visit and clinical interview and with the administration of a questionnaire.	Two sessions of drug administration (estrogens and hyaluronic acid) via the vagina without electroporation, 3 days apart in the first week. In the following 4 weeks the woman will undergo 1 session per week. At the end of the 5 weeks a second check-up will be carried out.	Three months after the end of the treatment a third follow-up check-up will be carried out, to observe and assess the advancements that have occurred without the electroporation, comparing the differences in outcomes achieved between the case group and the control group.

The study will take place in the Department of Gynecology and Obstetrics the SS Trinita' Hospital of Sora, and will be conducted

under an informed consent and authorized by the Ethical Committee for each patient. The study was completed without any additional payment from patients or reimbursement for patients.

The final aim is to improve the treatment of pelvic floor disorders in the urological, gynecological and urinary fields, w considering different remarks:

I. Evaluation of the effectiveness of electroporation in pelvic floor rehabilitation

II. reduction of pain during sexual intercourse (dyspareunia)

III. reduction of stress and urge urinary incontinence reduction of vaginal dryness

IV. improvement of vulvar and vaginal atrophy conditions

V. Improved elasticity of the pelvic floor muscles/vaginismus

VI. reduction of lichen presence and associated disorders

VII. improvement of fistulas and fissures.

In recent years, more and more women are lifting the veil of embarrassment and shame on pelvic floor disorders, despite it being a topic that touches the lives of many and conditions their quality, it is still a taboo subject. And this fact actually happens and is linked to education and sexual misinformation. In addition to long-term therapeutic outcomes, our aim is also to raise awareness in the community on the subject, to anticipate the times of intervention and therefore reduce its duration.

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Conflicts of interest

There is no Conflicts of interest

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