Letter to Editor

Preliminary experience with vaginal electroporation of hyaluronic acid and DHEAS for genitourinary syndrome

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Background

Pelvic floor disorders in postmenopausal women are mainly due to hypoestrogenism and tissue hypotrophy. Electroporation is a novel technique that enhances transmembrane drug delivery, with potential applications in gynecology.

Methods

We conducted a prospective observational study using intravaginal electroporation of hyaluronic acid and DHEAS. In addition, Diazepam was administered in selected patients with pelvic floor hypertonicity and hypertonic dyspareunia.

Results

Data showed an improvement in vaginal trophism and a significant reduction in symptoms such as dryness, burning, and dyspareunia. The procedure was well tolerated, with no adverse events reported.

Conclusions

Electroporation combined with hyaluronic acid, DHEAS, and diazepam for hypertonicity, depicts a promising, safe, and non-invasive strategy for the management of pelvic floor disorders in postmenopausal women.

Genitourinary syndrome of menopause (GSM) remains a frequent yet underdiagnosed condition that significantly affects women's quality of life. Conventional local estrogen therapy and systemic hormone replacement therapy (HRT) as other methods[1] are effective, but not always suitable or accepted by patients. ot always suitable or accepted by patients.

Electroporation is a non-invasive technique that usesshort electrical pulses to temporarily increase the permeability of the cell membrane, creating reversiblemicro-pores that facilitate the entry of active molecules(e.g., hyaluronic acid, DHEAS, diazepam). In addition, it applies low-intensity micro-electrical impulses that gently stimulate the vaginal tissues, promotingmicrocirculation, muscle tone, and cellular activity without generating heat.[2]

We report our preliminary experience using vaginal electroporation with hyaluronic acid and DHEAS as a minimally invasive, non-hormonal therapeutic approach.

From April to October 2025, we prospectively treated 60 women presenting with GSM symptoms at our outpatient clinic using the EV PLUS device.[3]

Each patient underwent one weekly electroporation session for eight consecutive weeks, with topical hyaluronic acid and DHEAS. Treatment protocols were personalized according to each patient's predominant symptoms,[4] since most women presented with multiple overlapping conditions (e.g., dryness, incontinence, mild prolapse). In these cases, electroporation was primarily directed toward the most bothersome symptoms, with possible collateral improvement in associated conditions.[5]

In addition, a subgroup of patients with dyspareunia has also been treated with vaginal diazepam in combination with electroporation.[6] These patients are still under treatment, and outcome data are not yet available; results will be reported in future analyses.

After completing the eight-session treatment cycle, 90% of patients reported subjective improvement, with a mean significant symptom score reduction of approximately 40–50%. No serious adverse events were observed, and tolerability was excellent, with only mild and transient local discomfort in a few cases.

The heterogeneity of patient conditions represents an additional limitation,[7,8] as electroporation cannot specifically address a single pathology in patients with multiple overlapping disorders. In addition, other authors underline that women with advanced pelvic organ prolapse do not show significant symptomatic improvement with electroporation, highlighting a major limitation of this therapeutic approach.[9] However, at post-treatment vaginal examination, we observed an improvement in muscular tone even in these patients, suggesting a potential supportive effect that warrants further investigation.

These findings support vaginal electroporation with hyaluronic acid and DHEAS as a promising, well tolerated option for GSM, especially for women seeking alternatives to conventional hormone replacement therapy.[10] Further controlled studies with longer follow-up are expected in order to confirm efficacy and clarify its role in patients with complex, overlapping pelvic floor disorders.

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Conflict of interest

There is no Conflict of interest.

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