ORIGINAL RESEARCH—INTERVENTIONS

Effect of Vaginal Electrical Stimulation on Female Sexual Functions: A Randomized Study

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ABSTRACT

Introduction. Female sexual dysfunction (FSD) is a common problem that may be encountered in the interruption of normal sexual functioning in the sexual response cycle. Women with a pelvic floor disorder who scored low on the Female Sexual Function Index (FSFI) showed an improvement in their sexual life following treatment by vaginal electrical stimulation (VES).

Aim. The aim of this trial was to evaluate the effectiveness of VES in women with FSD without a predominant pelvic floor disorder or urinary incontinence.

Methods. Forty-two women with FSD were randomly allocated to VES and placebo groups. Pelvic floor muscle (PFM) assessment and the FSFI questionnaire were performed at baseline and after the completion of sessions. VES treatment was administered using a vaginal probe. The probe was inserted, and a medium-frequency (50 Hz) alternating current was administered for a duty cycle of 5 seconds on followed by a 5-second rest.

Main Outcomes Measures. Primary outcome measure was the improvement in FSFI score. PFM assessments were performed according to the PERFECT scheme.

Results. Total FSFI scores improved significantly in both the VES group and the control group. Results show that in the VES group, there was an improvement in total score and FSFI domains that improved including arousal, desire, orgasm, and satisfaction. Similarly, control group domains that improved were desire, arousal, and orgasm. But there was no significant increase in satisfaction scores in the placebo group. No significant changes in pain or lubrication domains were seen in either group. Power, endurance, fast contractions, and repetitions were significantly improved in the VES group.

Conclusions. The lack of significant differences between the placebo and VES groups, except the satisfaction domain, puts into question the effectiveness of electrical stimulation as a monotherapy in treating primary FSD without pelvic floor disorder. **Aydın S, Arıoğlu Aydın C, Batmaz G, and Dansuk R. Effect of vaginal electrical stimulation on female sexual functions: A randomized study. J Sex Med 2015;12:463–469.**

Key Words. Vaginal Electrical Stimulation; Female Sexual Dysfunction; Pelvic Floor Muscle; Orgasm; Dyspareunia

Introduction

Female sexual dysfunction (FSD) represents any problem that may be encountered in the interruption of normal sexual functioning at one or more points in the sexual response cycle, which prevents the individuals or a couple from experiencing satisfaction from sexual activity resulting from physical, social, and psychological factors. Its incidence increases with age, and some form of sexual dysfunction is experienced by as many as 40% to 45% of women in their lifetime [1]. Generally, FSD falls into four categories: hypoactive sexual desire disorder (lack of desire before or during sexual activity), female sexual arousal disorder (lack of subjective arousal sensation or physical signs such as vasocongestion and lubrication), female orgasm disorder (inability to experience

orgasm), and dyspareunia (pain experienced during vaginal penetration or intercourse) [2].

Pelvic floor muscles (PFMs) are known to play an important role in sexual function as they are responsible for the involuntary rhythmic contractions during orgasm and vaginal sensation during intercourse. PFM function has an important role in the ability to maintain urinary continence. Strengthening of the PFMs is one of the first options recommended for the treatment of mild to moderate stress incontinence [3]. The initial conservative treatment modalities include PFM exercises, functional electrical stimulation, and surface electromyography (EMG) biofeedback. Vaginal electrical stimulation (VES) has been shown clinically to be effective in the treatment of patients with stress urinary incontinence and detrusor overactivity [3]. Intravaginal electrical stimulation also works in a passive way, helping the patients to become conscious of the action of the perineal muscles [4].

Based on the few data available on the improvement of PFM function, functional electrical stimulation, as a part of a complete PFM rehabilitation program to treat stress urinary incontinence, was also effective in the treatment of sexual dysfunction in these women [5–7]. No study has investigated the results of PFM rehabilitation in women with FSD without pelvic organ prolapse or urinary incontinence. The aim of this double blind, placebo-controlled, randomized clinical trial was to evaluate the effectiveness of VES in women with sexual dysfunction without predominant pelvic floor disorder or urinary incontinence.

Methods

This prospective randomized controlled trial study was carried out at the urogynecology unit of the Bezmialem Vakif University, Istanbul, Turkey. The study was approved by the institutional ethics committee. The trial was registered on ClinicalTrials.gov as NCT02220946. The supporting CONSORT checklist is available as supporting information; see Checklist S1. Women without comorbid disease who were admitted to the gynecology clinic with the complaint of sexual dysfunction at any part of the sexual cycle (e.g., desire, arousal, orgasm, or pain) were included in the study. Potential participants were excluded if they were pregnant, had undergone previous gynecologic surgery, had undergone a cesarean section or vaginal delivery within the previous 6 months, had pelvic organ prolapse greater than stage 1 on the pelvic organ prolapse quantification system (POP-Q), and women with neurological or anatomical defects.

After the study protocol was explained and written informed consent was obtained, all eligible volunteers were asked to complete a self-administered questionnaire in a private room. One of the authors was available when participants needed further explanation about the questions. The first questionnaire was designed to gather information on demographic characteristics such as age, mode of delivery, education level, financial status, and smoking status. The second questionnaire was the Female Sexual Function Index (FSFI), which enables the evaluation of the key dimensions of female sexual function through its six domain structures: desire, subjective arousal, lubrication, orgasm, satisfaction, and pain [8]. Higher scores indicate better sexual function. A total FSFI score under 26.55 indicates sexual dysfunction, with domain scores below 3.6 signifying abnormal function in the respective areas [9,10]. Furthermore, it has been shown to be a reliable and validated measure of female sexual function when used among the Turkish population [11].

PFM assessment and pelvic organ prolapse quantification were performed at baseline and after the completion of sessions. After the treatment protocol was explained to participants, PFM assessment was performed by a trained clinician who was blinded to the participant's group assignment. PFM function was evaluated through intravaginal digital examination according to the PERFECT scheme. The PERFECT scheme has demonstrated reliability and validity as an assessment tool of PFM assessment [12]. This evaluation included the registration of PFM maximum voluntary contractile strength (P) scored from 0 (no contraction) to 5 (contraction against strong resistance) according to the modified Oxford grading system; static endurance (E) measured as the time (in seconds) that a maximal voluntary contraction can be held before strength palpably declines; dynamic endurance (R), recorded as the number of times that a moderate contraction can be repeated before contraction strength palpably declines; and the number of fast contractions (F) [13]. "ECT" completes the acronym and reminds the examiner to "every contraction timed" and record the above sequence of events.

After the initial assessment, all patients were randomly allocated to 1 of 2 groups according to a computer-generated randomization scheme (1:1 ratio). Vaginitis or any other amendable diseases