



Outcomes of electrical stimulation therapy in addition to pharmacotherapy in female overactive bladder patients

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ABSTRACT

Overactive bladder (OAB) is quite common in females, resulting in frequency in urinating, urgency and urge incontinence. Currently, there are a good variety of pharmacotherapeutic options for OAB, all approved in terms of efficacy and safety. However, there are some handicaps of these drugs; there is still a portion of patients that do not respond well enough to these drugs, or even they do respond, 'zero symptom state' can not be attained in all patients. And even all these are sustained, patient adherence to OAB medication is consistently reported relatively short in studies. Besides, pharmacotherapy, electrical stimulation is a modality used for many decades in OAB patients. Recently, transcutaneous tibial nerve electrical stimulation (TTNS) is becoming more widely used and accepted in OAB patients. Current data, reveals very little or none at all for combination of these two different therapeutic options. We hereby report preliminary results of combination for OAB drugs and electrical stimulation in female OAB patients.

METHODS

We retrospectively evaluated medical records of patients referred to our Pelvic Rehabilitation Unit from Urogynecology Outpatient Clinic between March 2018 and January 2019. Twenty-one patients with symptoms of pure OAB and OAB predominant incontinence were included for data analysis. All included patients were still had some sort of bothering residual symptoms of OAB, although under stable OAB medications. Patients were either treated with intravaginal electrical stimulation (IVES) or TTNS. All patients were examined for pelvic floor muscle strength (graded with Modified Oxford Scale) and assessed with 3 days bladder diary, 24 hour pad test, 8-item Overactive Bladder Questionnaire (OAB-V8) and International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF). These assessments were provided both before initiation and after cessation of electrical stimulation treatments. As a standard procedure, all patients were given general information on OAB management and behavioral modifications were encouraged. IVES treatment was provided by Biolito Device (MTR+, Germany) with a vaginal probe intravaginally for 30 minutes with a frequency of 10 Hertz for a total of 15 sessions. TTNS was applied by the same device transcutaneously with surface electrodes to tibial nerve with a frequency of 5 Hertz for 30 minutes as a total of 12 biweekly sessions.

RESULTS

We have analysed data of 21 female OAB patients whom are under stable OAB drugs and received TTNS or IVES modalities for given parameters simultaneously. All patients continued their previously prescribed OAB medication throughout the treatment period without any change in drug or modification in dose. Mean age of patients was $56,8 \pm 11,6$, mean body mass index was $28,7 \pm 4,1$, mean symptom duration was $31,8 \pm 21,9$ months and mean number of parity was $2,9 \pm 1,4$. Of these 21 patients; 14 patients received TTNS and remaining 7 patients received IVES. Mean compliance to treatment sessions was 92%. After treatment mean OAB-V8 score was statistically significantly lower when compared to pre-treatment mean OAB-V8 scores ($23,7 \pm 8,5$ and $12,6 \pm 10,4$ respectively: $p < 0,05$). Similarly, mean ICIQ-SF score was statistically significantly lower after IVES&TTNS treatments ($16,8 \pm 4,9$ and $9,6 \pm 7,9$ respectively: $p < 0,05$). Analysis of bladder diary before and after treatment were as given: Mean number of urgencies was $4,2 \pm 4,1$ before treatment and $2,7 \pm 2,9$ after treatment ($p < 0,05$). Mean number of incontinence episodes that is $2,2 \pm 2,6$ before treatment regressed to $1,0 \pm 2,5$ after treatment ($p < 0,05$). Although there were numerical reductions in mean values for urinary frequency, nocturia, and pad test values; they were not statistically significant ($p > 0,05$). One patient under IVES had a side effect of vaginal infection with no requirement to end treatment and one another patient's treatment was terminated due to vaginal irritation from IVES. No side effect was seen in TTNS patients.

INTERPRETATION OF RESULTS

OAB syndrome can still have bothersome symptoms for a group of patients even taking OAB medications. For these patients addition of electrical stimulation either applied intravaginally or with stimulation of tibial nerve transcutaneously over current OAB drugs can be beneficial in helping these patients. There is accumulating data on the effectiveness of combination of different OAB drugs.

CONCLUSIONS

However data on simultaneous treatment of OAB patients with pharmacotherapy and electrical modalities is quite limited. Although based on retrospective medical records with a very limited number of patients, our findings suggest that combination of OAB drugs with electrical stimulation -either IVES or TTNS- may be beneficial for patients not fully responding to medications. So, there is a need for prospective randomized controlled studies with a sufficient number of patients to evaluate combination of these different treatments in OAB patients.