

EFFECTIVENESS OF CONSERVATIVE THERAPY IN IDIOPATHIC OVERACTIVE BLADDER

Hypothesis / aims of study

Overactive bladder (OAB) is a common disabling condition that affects health-related quality of life. Pelvic floor rehabilitation is the first recommended conservative line in the management process per recent guidelines (1). Biofeedback has been successfully employed in many cases of urinary and stool incontinence. It helps to isolate the specific muscles and can assist in motivation by visibly displaying pelvic floor muscle activity and progress (2)

Our aim was to investigate the role of biofeedback and electrical stimulation as conservative management lines for idiopathic OAB.

Study design, materials and methods

Our study was carried out on 30 females with idiopathic overactive bladder (complaining of urinary urgency and/or urinary frequency with or without urinary incontinence). Diagnosis was confirmed by urodynamics study. Ten matched apparently healthy female volunteers were included and served as a control group.

All patients and controls underwent thorough clinical, neurological and electrodiagnostic assessment (including Pudendal nerve terminal motor latency PNTML) to exclude any associated neuropathic condition.

Patients received 12 sessions (3/week) of biofeedback (BFB) and Interferential (IF) electric stimulation to pelvic floor muscles (using myomed 632 instrument). A vaginal probe was inserted into the vagina to monitor pelvic floor muscles contraction. The patient was instructed to contract and relax the pelvic floor muscles upon command and the power of contraction was monitored on a screen (audio and visual) so it can be used to enhance the effectiveness of Kegel exercises. Training of fast and slow twitch muscle fibers was performed. The exercise started by 5 flickers of rapid maximum contraction followed by successive intermittent contractions and relaxations. (Work-rest cycles as shown in figure 1). The total time committed to actual exercise is approximately 15 minutes. The strength, endurance and reaction time were assessed.

IF : Four electrodes were placed :Two electrodes placed on the lower abdomen just above the outer half of the inguinal ligament, the other two electrodes placed on the upper part of inner aspect of thigh near the origin of adductor muscles (to direct the current through pelvic floor muscles with the interference point at the urethral sphincter). After setting the precise frequencies, intensity increased till patient felt prickling sensation.

Symptom Score Questionnaire (SSQ) was recorded for the patients before and after the sessions (3). It is a self-administered questionnaire consisting of seven questions on a five-points scale including all symptoms of OAB (frequency, nocturia, urgency, urge incontinence and bladder control). The total score range (0-28). The lower the score is, the worse the symptoms.

This study was novel in combining neurophysiologic assessment with biofeedback treatment assessment in idiopathic OAB patients.

Results

Patients' age ranged from 20 to 51 years with a mean \pm SD= (38.5 \pm 8.9) years and their body mass index (BMI) ranged from 27.6 to 33.3 kg/m² with a mean \pm SD= (29.4807 \pm 1.95674).

Regarding parity, it ranged from (1-5) children in our patients with mean \pm SD= (3.33 \pm 1.18).

Mode of delivery: it was by vaginal delivery (VD) in 25 of our patients with a percentage of (83.3%), and by cesarean section in 5 of our patients with a percentage of (16.7%).

The patients and controls were matched regarding age, BMI, parity & the mode of delivery ($p > 0.05$).

*Our patients showed a significantly delayed PNTML than controls (Table 1)

*All our patients showed improvement of their symptoms after 12 physical therapy sessions (100%).

There was a highly significant increase of the score of the SSQ after the rehabilitation sessions (Table 2).

Interpretation of results

*The delayed PNTML is a sign of demyelination which may be due to any cause, such as traction of terminal portion of pudendal innervations due to vaginal delivery. (A finding suggesting possible neuropathic involvement in OAB).

*The significant increase of SSQ after the sessions indicate good response of OAB to pelvic floor rehabilitation by biofeedback and electrical stimulation on pelvic floor muscles.

Concluding message

Possible neuropathy may contribute in the pathogenesis of idiopathic OAB for further research studies.

Pelvic floor rehabilitation through biofeedback and IF is an effective and promising conservative tool in improving symptoms of idiopathic OAB.

Fig (1) : Work -rest cycles through biofeed back sessions



Table (1) : Comparison of PNTML among patients and controls

Side	Patients PNTML Range (in milliseconds)	Patients PNTML Mean±SD	Controls PNTML Range (in milliseconds)	Controls PNTML Mean±SD	T	P	Significance
Right pudendal	1.8-3.3	2.56±0.489	1.5-2.2	1.91±0.2	4.06	0	HS
Left pudendal	1.9-3.2	2.49±0.47	1.6-2.3	1.91±0.3	3.668	0	HS

PNTML : pudendal nerve terminal motor latency. HS: Highly significant

Table (2): Comparison between SSQ of patients before and after sessions:

	SSQ before sessions Mean±SD	SSQ after sessions Mean±SD	T	P	Significance
Score	9.1±2.56	14.5.852	0.22	0	HS

SSQ; Symptom Score Questionnaire HS : highly significant

References

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