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Title: TREATMENT OF STRESS AND URGE INCONTINENCE BY EXTRACORPOREAL MAGNETIC INNERVATION

Aim of study:

To evaluate the efficacy and safety of Extracorporeal electromagnetic innervation (EXMI) on urinary urge and stress incontinence by subjective and objective parameters.

Methods:

During an 8 month period, 98 incontinent females (mean age 65.5 years; range 22-88) were examined. 43 had genuine stress incontinence and 55 had severe urge incontinence. Exclusion criteria were pregnancy, arrhythmia, pelvic malignancy or post irradiation therapy. Each patient was evaluated before and immediately after treatment. Outcome measures included urodynamics, a urine diary, a validated quality of life form, a satisfaction questionnaire, and a measure of strength of contraction and endurance of the pelvic floor muscles. Each subject underwent a 16-session treatment program (20-minute sessions twice a week for 8 weeks). In all sessions, the frequency of induced electromagnetic field was constant (5 Hz for the first 10 minutes and 50 Hz for the next 10 minutes). The intensity was adapted individually. Data from all treated subjects was statistically analyzed using paired t-test and chi square.

Results:

80 females completed the full 16-session treatment course. Data are reported on all patients completing the full treatment.

56% (35/43) of patients with genuine stress incontinence were followed. 16 (46%) were totally dry at the end of the treatment course, confirmed by negative stress test. The remaining 19 (54%), showed improvement in the number of leak episodes per day (from a mean of 4.3 to 2.3, p= 0.005). In contrast, objective parameters such as strength and endurance of pelvic floor muscles did not demonstrate the same degree of improvement-strength of contraction improved from 2.9 to 3.7 microvolts, (p=0.02), and endurance from 5.5- 7.6 sec., (p=0.1).

For urge incontinence, 82% (45/55) of patients completed treatment. 21 (56%) were dry after treatment, and another 9 (20%) had significantly improved. 11 (25%) failed treatment. The average daytime frequency dropped from 11.3 to 8.4 times/day (p=0.001) and nighttime frequency from 2.3 to 1.0 (p= 0.002). In the 'improved' group, the average number of incontinence episodes dropped from 3.1 to 1.6 a day (p=0.006).

From the urodynamics data, 22 subjects had proven detrusor instability before treatment on an average volume of (185± 65) ml. After treatment, 16 of the 22 still demonstrated detrusor instability, but on a significantly higher bladder volume (235 ± 85). Patient responses before and after treatment showed an improvement in quality of life and a high satisfaction rate. There were no complaints of discomfort, pain or

side effects. All 7 patients with initial bladder pain were significantly relieved after treatment.

Conclusions:

ExMI was found to be an effective and convenient method of treating urinary incontinence. It is not associated with pain or side effects. Due to its non-invasiveness, we believe this method should be used as first choice for conservative management for stress urinary incontinence. Long term placebo-controlled studies are still essential to properly evaluate the true efficacy of this treatment modality. No assistance was provided for this study.