

**THE EFFICACY OF EXTRACORPOREAL MAGNETIC  
INNERVATION (ExMI) IN THE TREATMENT OF STRESS AND  
URGE INCONTINENCE, EVALUATED BY SUBJECTIVE  
AND OBJECTIVE PARAMETERS**

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**ABSTRACT**

**Introduction & Objectives:** To evaluate the efficacy and safety of Extracorporeal Magnetic Innervation (ExMI) on urge and stress incontinence by subjective and objective parameters.

**Patients & Methods:** 33 incontinent females (mean age= 66.5 years; range 26-78) were examined. 15 had stress incontinence (SI) and 18 had severe urge incontinence (UI). Each patient was evaluated before and after treatment by urine diary, urodynamics, quality of life, satisfaction questionnaires, and measurement of strength of contraction and endurance of the pelvic floor muscles (PFM). Every subject underwent a 16-session treatment program lasting 20 minutes (2-sessions/week). On all sessions, the frequency of induced magnetic field was constant while intensity was adjusted individually. Data was analyzed using paired t-test and chi square.

**Results:** 28 (85%) females completed the treatment course. 4 discontinued after 3-7 sessions due to unchanged condition, 1 due to personal reasons. Of the 12 patients with SI, 7 (58%) were totally dry at the end of treatment, confirmed by negative stress test. In the remaining 5 (42%), improvement in number of leak episodes/day was documented (from a mean of 4.3 to 2.3,  $p=0.005$ ). By contrast, objective parameters did not demonstrate any clinically significant change— both contraction strength (from 3 to 3.9 mV,  $p=0.02$ ), and endurance (from 6.5 to 7.3 sec.,  $p=0.1$ ) improved only slightly. These values were much lower than normally achieved on biofeedback PFM exercise. Of the 15 women treated for UI, 5 (33%) were dry and 7 (47%) improved significantly after treatment. In these, the average number of incontinence episodes dropped from 3.7 to 2.3 per day ( $p=0.006$ ) and the mean frequency dropped from 12.6 to 9.7 times per day ( $p=0.001$ ). On urodynamics, 11 subjects had detrusor instability before treatment on an average volume of  $142 \pm 34$  ml. After treatment, 10 demonstrated detrusor instability, but on a significantly higher bladder volume ( $178 \pm 26$ ). Overall, most patients were pleased with the results. No complications or side effects were reported.

**Conclusions:** ExMI is an effective, non-invasive convenient method, unassociated with side effects. Long term placebo-controlled studies are still essential for proper evaluation of this treatment modality.

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