

## **EFFECTS OF EXTRACORPOREAL MAGNETIC INNERVATION IN THE TREATMENT OF URINARY INCONTINENCE, DEFACATION PROBLEMS AND PELVIC FLOOR DYSFUNCTION.**

### Hypothesis / aims of study

Pelvic floor dysfunction is primarily treated pharmacologically or by physiotherapy. Biofeedback training can improve selective control of pelvic floor musculature, with reduction in miction, defaecation or sexual symptoms. Electrical stimulation has been reported to be an effective treatment as well. Several techniques of electrical stimulation are available, like intra anal or vaginal stimulation, Tibial Nerve Stimulation and Sacral Nerve Stimulation. Extracorporeal magnetic innervation therapy (ExMI) is a more recent non invasively technique. This is based on a classic principle of physics, namely that a changing magnetic field will induce a flow of electrons within the field resulting in depolarization of adjacent peripheral nerves and contraction of muscles. This study was designed to correlate the clinical results of this treatment with functional changes in pelvic floor musculature

### Study design, materials and methods

74 Patients with urge incontinence, urgency/frequency, stress incontinence, mixed incontinence and defaecation problems were included in a prospective study, using the Neocontrol electromagnetic chair (Neotonus Inc); Myomed 932® equipment and a vaginal or anal probe were used for registration of pelvic floor musculature, at baseline and after completing the treatment. A voiding diary, a pad-test, Kings Health Questionnaire (KHQ, 1993) and a Visual Analogue Scale (VAS) and as well as an urodynamics research investigation were completed at baseline and at the end of the study to monitor voiding complaints and quality of life. The examination of the pelvic floor included a visual inspection of a pelvic floor contraction and paradoxal behaviour, a digital palpation including the rest tone and of the pelvic floor, a voluntary contraction and paradoxal behaviour. Finally, during biofeedback registration we looked at the rest tone, the fast and slow twitch activity, the slow twitch activity and the paradoxal behaviour. The results were analysed using the Wilcoxon signed rank tests and the independent-Samples T Test.

### Results

The mean age of our patients was 54 years (range 22-90)

Because of inability to attend to all sessions, an increase in symptoms, a total of 15 patients failed to attend all treatments. We classified patients into several groups: urology patients/surgery patients, age < /> 50 years, overactive/ under active pelvic floor, stress, mixed and urge incontinence.

The biofeedback registration evaluation of the pelvic floor demonstrated in 37 patients an overactive pelvic floor function, in 4 patients an under active pelvic floor function and in 18 patients and normal pelvic floor function.

Voiding diary, pad test, VAS, Quality of life and Urodynamic data were used to compare the severity of incontinence before and after therapy. Evaluable data were available in 40 patients 40 Baseline and ending bladder diaries, pad tests, VAS scores and Quality of Life and provided evaluable data were completed satisfactorily.

Comparison of these data the voiding diary, padtest, Quality of Life, as well as of biofeedbackregistration and urodynamics pre- and posttreatment there was showed no signigancy in all the classified groups ( $p > 0,05$ ). When combining several measurements measures were combined there also was no significance was found.

### Interpretation of results

We found no differences in pelvic floor muscle activity, pad test, Quality of life, voiding diary and Urodynamics among our patients who received ExMI treatments.

### Concluding message

We found no differences in pelvic floor muscle activity, pad test, Quality of life, voiding diary and Urodynamics among our patients who received ExMI treatments. ExMI seems to add no changes in pelvic floor function in our patient population.

Traditional pelvic floor exercises, functional electro stimulation and biofeedback training remain the first and the best method for treating pelvic floor dysfunction in case of urgency/frequency, urge-, stress-, mixed incontinence and defaecation problems.