

## IS THERE A ROLE FOR URODYNAMIC TEST ON CONSERVATIVE TREATMENT? URODYNAMIC EVALUATION OF URINARY INCONTINENT WOMEN TREATED WITH PERINEAL MAGNETIC STIMULATION.

### Aims of Study

The perineal magnetic stimulation (PMS) arose as an alternative to electrical perineal stimulation on the urinary incontinence treatment. The perineal electrical stimulation has been proved to be effective and safe, however the vaginal and anal electrodes causing pain and discomfort has been a great obstacle to a wide use. The PMS generates a magnetic field, which is able to stimulate deep nerves with no significant interference by the body tissues. On the other words, PMS generates the same or a better stimulation on the pelvic floor nerves than electrical stimulation, does not need electrodes or direct skin contact, is painless and does not need training. The role of urodynamic study (UDS) in conservative treatment is controversial, because the test can be more invasive than the treatment itself. The UDS would be justifiable only if it could add any advantage to the treatment by means of better patient selection. We evaluate the effect of 16 sessions of PMS on clinical and urodynamic parameters and the UDS potential benefit on the PMS pre-treatment evaluation.

### Methods

Forty one consecutive outpatients' women were enrolled in a prospective clinical trial. Eligible patients were neurologically normal, had normal urinalysis, absence of severe prolapse and demonstrable urinary incontinence (UI). All patients were treated using a specially designed chair (Neotonus Inc., Marieta, GA ). The PMS were done twice a week consisting 20 minutes of stimulation, being 10 minutes at 5 Hz and 10 minutes at 50 Hz. The evaluation was done through clinical history, symptom questionnaire, 72 hours voiding diary, validate quality of live questionnaire (I-QOL) and complete urodynamic test at baseline and after 16 sessions of PMS.

### Results

The mean age was 62.5 + 10.3 years, 9 patients (22%) had previous hysterectomy, 20 patients (49.8%) had previous surgeries for UI treatment, 37 patients (90%) were post menopause and the mean body mass index (BMI) was 25.4 ± 8, the initial clinical evaluation and urodynamic test showed 24 women (58.5%) with pure SUI and 17 (41.5%) patients with detrusor overactivity. Patients with detrusor overactivity were divided in two groups: 1) SUI associate with low pressure (< 15 cm H<sub>2</sub>O) detrusor overactivity (n=9) and 2) high pressure (≥ 15 cm H<sub>2</sub>O) detrusor overactivity leading to urinary leakage or involuntary voiding (n=8).

Overall after 16 PMS sessions, the average improvement on the I-QOL score was 29.6% ( $p < 0.001$ ), the number of leaks/day and the number of pads/day had a mean decreased of 47.2% ( $p < 0.001$ ) and 36.2% ( $p < 0.001$ ), respectively. The UDS parameters evaluation showed increased of 36% ( $p = 0.024$ ) on mean volume at first filling sensation, 17.7% ( $p = 0.005$ ) on mean volume at the normal voiding sensation and 3% ( $p = 0.780$ ) on maximal bladder cystometric capacity. The PMS also increased the mean VLPP value in 24.3% ( $p = 0.001$ ). Ten women (24.4%) did not show leakage episodes at the clinical and urodynamic evaluation. The baseline VLPP of those patients that became dry was 80 cm H<sub>2</sub>O in one, 90 cm H<sub>2</sub>O in two and more than 90 cm H<sub>2</sub>O in seven patients. Six (66%) out of 9 patients with low pressure detrusor overactivity became dry and 7 patients (77%) became free of urge/urge-incontinence symptoms and detrusor overactivity. On the other hand, no one out of the 8 patients with high pressure overactive bladder became dry or showed any change on bladder behaviour.

### Conclusions

Overall, women with urinary incontinence treat by PMS have a significant improvement on the symptoms, VLPP and QOL, with 24% of objective chance to become dry. Patients with SUI associated to symptoms of urge or urge-incontinence and low pressure bladder overactivity have 66% chance to become dry and 77% chance to get rid of the overactivity. High

pressure bladder overactivity does not respond to this approach. The treatment is more effective if the baseline VLPP is over than 80 cmH<sub>2</sub>O. Due to the ability to separate groups with high chance to get cure from groups with low chance of improvement, pre treatment UDS evaluation can beneficiate patients in conservative treatment.