

## EXTRACORPOREAL MAGNETIC STIMULATION VERSUS POSTERIOR TIBIAL NERVE STIMULATION IN THE TREATMENT OF REFRACTORY MONOSYMPTOMATIC NOCTURNAL ENURESIS: A PROSPECTIVE RANDOMIZED STUDY.

### Hypothesis / aims of study

Nocturnal enuresis has a negative impact on quality of life and psychological status of the patient, family and community. Most patients respond to Behavioral modification, bladder training, drugs and alarm. However, both posterior tibial nerve stimulation and magnetic stimulation were used in refractory cases, our aim is to evaluate its efficacy, safety and tolerability in refractory monosymptomatic nocturnal enuresis.

### Study design, materials and methods

49 patients with refractory monosymptomatic nocturnal enuresis were included (37 boys and 12 girls, median age 13 years, range 9 to 19) and randomly divided into 2 groups. Group A (GA) 29 patients offered once weekly session of magnetic stimulation using magnetic chair for 12 weeks the patient were seated on special chair containing a magnetic field generator to stimulate pelvic floor muscles for 20 minutes and group B (GB) 20 patients received weekly session of posterior tibial nerve stimulation (using personal computer based system) for 12 weeks. All patients were evaluated by history including pad test, voiding and nocturnal enuresis diary, physical examination, urine analysis, and pelviabdominal ultrasound. Patients were followed after sessions, and 3 months later by voiding and nocturnal enuresis Diary. Both techniques were also compared as regard complications and tolerability using Clavien complication grading.

### Interpretation of results

The 2 groups were matched in baseline data. Significant decrease in frequency of bedwetting episodes occurred in both groups. (from  $5.2 \pm 1.3$  to  $1.3 \pm 0.1$ ) GA and (from  $6.1 \pm 0.9$  to  $1.4 \pm 0.5$ ) in GB,  $p=0.002$ . After treatment 24 patients in GA (82.7%) had a partial or full response to magnetic stimulation, and 18 patient in GB (90%) achieved partial to full response to posterior tibial nerve stimulation ( $p = 0.002$ ). In GA 15 patients cured, 9 improved while 5 not responded while in Gb 11 cured 7 improved and 4 failed. According to voiding Diary, the mean functional bladder capacity increased 42% in all patients ( $P = 0.00$ ). In GB minor bleeding at needle site in 5 cases and temporary painful feeling in 7 cases and classified as Grade 1 Clavien.

### Concluding message

Extracorporeal magnetic stimulation is a noninvasive, effective and painless therapy for primary monosymptomatic nocturnal enuresis with comparable results to posterior tibial nerve stimulation.

### Disclosures

**Funding:** NO **Clinical Trial:** Yes **Public Registry:** No **RCT:** Yes **Subjects:** HUMAN **Ethics Committee:** BENHA FACULTY OF MEDICINE, EGYPT **Helsinki:** Yes **Informed Consent:** Yes