

PATIENT CONTROLLED VERSUS AUTOMATIC STIMULATION TO TREAT NEUROGENIC DETRUSOR OVERACTIVITY

Hypothesis / aims of study

Electrical stimulation of pudendal nerve afferents has shown to be an effective method to suppress the involuntary detrusor contractions in patients with NDO¹. The goal of this study was to investigate whether patients with neurogenic detrusor overactivity can sense the onset of bladder contraction and in turn can suppress the contraction by electrical stimulation of the dorsal penile/clitoral nerve.

Study design, materials and methods

Sixty seven patients with different neurological disorders were recruited to undergo 3 filling cystometries. The first cystometry was without stimulation. The second was performed with automatic controlled stimulation, based on detrusor pressure. The third cystometry was conducted with patient controlled stimulation using a push button.

Results

Seventeen patients (4 females and 13 males) underwent all 3 fillings. Compared to cystometry 1, average bladder capacity in both cystometry 2 and 3 was 60% higher. Compared to peak pressure in cystometry 1, average peak pressure during suppressed contractions in both cystometry 2 and 3 was 49% and 26% lower, respectively. The delay of the onset of the stimulation in cystometry 3 with respect to the cystometry 2 was on average 5.7 s.

Interpretation of results

On average, the increase in bladder capacity for patient controlled stimulation cystometries compared to the one without stimulation was 68±90 ml. Considering that the filling rate was 30 ml/min, the first leakage was postponed by an average 2.3 min. However, assuming for these patients a natural filling of 1.8 ml/min (mean weight of 72 kg and natural filling rate of 1.5ml/kg/h), stimulation could have provided an average warning time of 38 minutes in normal conditions.

Patient controlled stimulation on pudendal nerve afferents could be a good solution to those patients who are refractory to pharmacological treatment or cannot tolerate to their side-effects. However, electrical stimulation can be unpleasant and sometimes even aching, especially for these patients, who have preserved sensation of the genitals.

Concluding message

The study shows that patient controlled genital nerve stimulation is as effective as automatic controlled stimulation. Patient controlled stimulation is thus feasible in selected patients, although patient needs to be trained with the technique.

References

1- Neurourol Urodyn (1986);4:381–389.

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<i>Is this a clinical trial?</i>	No
<i>What were the subjects in the study?</i>	HUMAN
<i>Was this study approved by an ethics committee?</i>	Yes
<i>Specify Name of Ethics Committee</i>	Institut Guttmann Local Ethics Committee
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes