Effect of electrical stimulation of the dorsal clitoral nerve on faecal incontinence

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Introduction
Faecal incontinence (FI) is defined as uncontrolled passage of fecal material occurring at least once per month. The symptoms are often socially unacceptable, and those affected may feel ashamed and humiliated. If not addressed, they could lead to social withdrawal and isolation. One of available treatment options involves electrical stimulation of a sacral nerve root using an implanted system. This is expensive and requires surgery. Another possibility is electrical stimulation of the tibial nerve using a needle electrode. Stimulation is performed at the hospital which requires the patient to go there regularly.

Objective
The goal of this study was to investigate whether non-invasive therapeutic electrical stimulation of the dorsal clitoral nerve can reduce the number of incontinence episodes in patients with idiopathic faecal incontinence.

Methods
Ten female patients (median age: 60y, range 34-68y) with idiopathic faecal incontinence gave consent for the study.

Intervention
The intervention comprised of 2x15 min stimulation per day for a period of 3 weeks. Stimulation parameters: monophasic square current pulses, 200 µs pulse duration, 20 pulses/s. Stimulation was conducted by the patients themselves at their own homes using a handheld battery powered stimulator (Itouch Plus, Tenscare ltd, Epson, UK). Two disposable surface electrodes were used. One electrode (20x10 mm, Neuroline 700, Ambu, Ballerup, Denmark) was placed on the clitoris and connected as cathode. The second one (round, diameter: 32 mm, Pals Platinum, Axelgaard, Lystrup, Denmark) acted as anode and was placed 2-3 cm lateral to the right labia.

Data collection
Patients kept a 3-week bowel habit diary prior to stimulation (baseline), during stimulation and immediately after the stimulation period.

Results
9 patients completed the protocol. One patient withdrew for personal reasons. All patients found it easy to place the electrodes and control the stimulator. Median stimulation amplitude was 27 mA (range 9-52 mA).

Therapeutic electrical stimulation of the dorsal clitoral nerve reduced the number of incontinence episodes (Table 1). The average reduction in episodes was 64%. While most patients experienced a reduction, only 1 patient became fully continent. This outcome is similar to results obtained with posterior tibial nerve stimulation and with sacral root stimulation. The effect of stimulation lasted for 3 weeks but had disappeared at longer follow-up.

Conclusion
Therapeutic electrical stimulation of the dorsal clitoral nerve reduces the number of incontinence episodes. This could be a low-cost, non-invasive treatment for patients with faecal incontinence. Further studies are needed to investigate how the effect of stimulation can be obtained for a longer period.

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Table 1: Number of incontinence episodes of 9 patients during 3 periods: Baseline (pre-stimulation), during stimulation and post-stimulation (immediately after the stimulation period). Each period lasted 3 weeks.