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LONG TERM RESULTS OF SACRAL NERVE STIMULATION (S3) FOR THE TREATMENT OF
NEUROGENIC REFRACTORY URGE INCONTINENCE RELATED TO DETRUSOR HYPERREFLEXIA

Aims of study : To assess long term clinical and urodynamic results of sacral nerve stimulation (SNS) for patients with neurogenic (spinal cord diseases) urge incontinence and detrusor hyperreflexia (DHR) resistant to parasympatholytic drugs and candidates for bladder augmentation.

Methods: Since 1992, 9 women (mean age 42.6 range from 26 to 53 years) were treated for refractory neurogenic urge incontinence with SNS. Neurological spinal diseases included myelitis, multiple sclerosis and traumatic spinal cord injury. Mean time since neurological diagnosis was 12 years. All patients suffered from incontinence (chronic pad use) related to proven detrusor hyperreflexia. Five used self-intermittent catheterization for detrusor external sphincter dyssynergia (DSD). Social life was impaired and these patients were candidates for bladder augmentation. They were free from upper urinary tract abnormality. Informed consent was obtained for all patients. A clinical improvement for more than 75% was observed during chronic test for at least one of the following parameters : number of leakage or pads use, number of micturitions per day or urgency symptom. A sacral (S3) lead was surgically implanted and connected to a subcutaneous neurostimulator (Medtronic, Minneapolis, MN).

Results: Mean follow-up was 43.6 months (range from 7 to 72 months). Unilateral leads were surgically placed either right S3 (5patients) or left S3 (4 patients). All patients had a clinically-significant improvement of incontinence and 6 patients were completely dry. Drug usage was no longer required by the implanted group of implanted patients. Average number of micturitions per day decreased (from 16.1 to 8.2). Urodynamic parameters at 6 months post-implant significantly improved from baseline: maximum bladder capacity (244 ml to 377 ml) and volume at first uninhibited contraction (214 to 340 ml). Maximum detrusor pressure at first uninhibited contraction was either increased (n=3), stabilized (n=2) or decreased (n=4). All patients reported an on-off effect. Urodynamic results returned to baseline (without implantation) when stimulation was inactivated. All patients subjectively reported improved visual analogic scale (VAS) results by at least 75% at last follow-up.

Conclusions: SNS can be used as a reversible treatment option for refractory urge incontinence related to detrusor hyperreflexia in selected patients with spinal lesions.

Bosch, J. L. H. R. and Groen, J.: Treatment of refractory urge incontinence with sacral spinal nerve stimulation in multiple sclerosis patients: *Lancet*, **348**: 717, 1996.