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EFFICACY OF EXTRACORPOREAL MAGNETIC INNERVATION THERAPY (EXMI) IN COMPARISON TO STANDARD THERAPY FOR STRESS, URGE AND MIXED INCONTINENCE: A RANDOMISED PROSPECTIVE TRIAL

Aims of Study

Since Extracorporeal Magnetic Innervation Therapy (ExMI) was presented by Nayal et al.[1]at the ICS in 1998 for the first time, it has been recommended for the treatment of stress, urge and mixed incontinence. However, most of these studies are uncontrolled. This is a randomized prospective trial, in which the efficacy of ExMI and conservative standard therapy for urinary stress, urge and mixed incontinence are compared.

Methods

26 patients (25 females and 1 male, aged between 27 and 79, mean age 57.3 a) were subjected to a treatment with ExMI or standard therapy according to randomization. 12 of those patients suffered from stress incontinence, 9 from mixed stress and urge incontinence and 5 from urge incontinence.

For the ExMI treatment a magnetic chair designed by the company Neocontrol® (originally designed by Ishikawe et al. [2]) was used. The number of treatment sessions was 20; the therapy was carried out 3 – 4 x / week during 6 weeks. The duration of each treatment session was 20 minutes using a frequency of 5 – 10 Hz in urge incontinence and 25 – 30 Hz in stress incontinence.

The standard therapy for stress incontinence comprised an intensive pelic floor reeduction programme over 6 weeks supported through electrotherapy if necessary. The therapy of urge incontinence comprised behavioural treatment and anticholinergics over 6 weeks.

The mean period of observation was 95 days with ExMI and 82 days with standard therapy.

Primary outcome measures: the bother due to incontinence (Visual Analogue Scale), the number of pads necessary and the max. urethral closure pressure in the stress group as well as micturition frequency in the entire group.

Results

The outcome in patients with stress incontinence and of the whole group are presented in table 1 and 2.

Table 1

Stress incontinence	**Standard therapy (n=7)**			**Magnetic chair (n=5)**		
	before	**after**	**p**	**before**	**after**	**P**
Bother	5 ±3	3 ±1	0,026	6 ±3	4 ±3	0,042
Pads	2 ±1	1 ±1	0,026	2 ±2	0 ±1	0,066
Pclo	47 ±17	57 ±18		59 ±14	75 ±33	
Micturitionfrequency	7 ±1	8 ±2	0,461	9 ±2	7 ±1	0,109
Micturition volume	264 ±121	258 ±167	0,891	220 ±27	279 ±58	0,080
1st desire to void	302 ±68	306 ±90	0,715	251 ±163	328 ±60	0,225
CC max.	515 ±100	510 ±101	0,715	494 ±79	456 ±49	0,109
Pad test	36,9 ±24,7	4 ±4	0,028	12,2 ±14,5	4 ±5	0,138

Table 2

Entire group	Standard therapy (n=15)			Magnetic chair (n=11)		
	before	**after**	**P**	**before**	**after**	**P**
Bother	6 ±2	3 ±2	o,oo3	7 ±3	4 ±3	0,016
Pads	2 ±1	1 ±1	0,002	2 ±1	1 ±1	0,016
Micturition frequency	9 ±3	8 ±2	0,122	9 ±2	8 ±1	0,017
Micturition volume	232 ±95	311 ±168	0,033	227 ±56	289 ±93	0,062
1st desire to void	218 ±108	270 ±75	0,075	246 ±128	292 ±89	0,139
CC max	478 ±101	486 ±114	0,799	479 ±98	458 ±65	0,327
Pad test	18,7 ±25,2	2 ±3	0,037	6,1 ±11	4 ±9	0,262

In patients with stress incontinence the results of the ExMI group were comparable to the results of the group subject to standard therapy. In both groups bother decreased, the max. urethral closure pressure increased (both statistically significant) and also the number of pads decreased (in the ExMI group not statistically significant).
In the entire group, patients of both groups experienced a statistically significant decrease in bother as well as decrease in micturition frequency (only significant in the ExMI group) and also in the number of pads used. As the number of patients with urge and mixed incontinence included in these groups is too low at the moment, there is no point in evaluating them seperately.

Conclusions

The outcome of ExMI with a magnetic chair in stress incontinence and in a mixed group of patients with stress, urge and mixed incontinence is comparable to standard therapy. The application is simple, without side effects and pain, and is well accepted in elderly patients especially.

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References

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[2] Ishikawa N, Suda S, Sasaki T. et al. 1998, Med.Biol.Eng.Comput. 36: 704 - 710