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DOES URODYNAMIC CHANGES CORRELATE TO CLINICAL IMPROVEMENT AFTER EXTERNAL PERINEAL MAGNETIC STIMULATION TREATMENT?

AIMS OF STUDY: Perineal magnetic stimulation(PMS) arise as a new modality of non invasive treatment for female urinary incontinence (1). Initial clinical results suggest that it is an effective approach for an expressive group of patients. This study pretend to evaluated if the urodynamic parameters obtained are in accordance to the clinical improvement refereed by the patients.

METHODS: We evaluated 34 patients with demonstrable urinary incontinence in a prospective study, with mean age of 62,14 +/- 10,13 years old. The patients were included if neurologically normal, ambulatory, with normal urinalysis and no current incontinence treatment. Patients with pregnancy, previous pelvic floor electric stimulation or Kegel's exercises, pelvic surgeries in the last 6 months, pelvic irradiation, atrophic vaginitis, heart pacemaker or others implanted metallic devices, were excluded from the study. Drugs with possible interference on the micturition, were asked to discontinued for 1 week and the patient was re-evaluated

Pre and post-treatment evaluation were made by a complete clinical history and physical examination, including a validated quality of life survey(QQV) specific to urinary incontinence(2), that vary from 22 to 110.In same way, urodynamic examination was done before and after the treatment.

Treatment comprised 16 sessions of 20 minutes of magnetic stimulation, being 10 min of intermittent low frequency stimulation (5Hz) and 10 minutes of high frequencies stimulation (50 Hz), with the interval of 5 minutes between both. The minimum interval between the sessions were 36 hours.

RESULTS: Comparison was made between two groups with variation in VLPP above and below 15 cmH2O. Higher increase in VLPP post treatment was significantly correlated to improvement in clinical parameters, like use of pads, leak, episodes and QQV score, in contradistinction to the group of non significant variation in VLPP (Table1). Improvement in bladder overactivity was mainly achieved in those with voluntary control of detrusor contraction.

Analyses of improvements consider the initial grade of incontinence as VLPP bellow 60cmH2O, above 90cmH2O and between these two situations. VLPP improved in the three groups, but it was significant only in the less severe incontinence one(Table 2).

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TABLE 1- Relationship of the valsalva leak point pressure (VLPP) changes to the variation of clinical parameters (n=30)#.

	VLPP improvement >15cm H2O(n=17)			VLPP improvement <15 cm H2O(n=13)		
	Before*	After*	Significance	Before*	After*	Significance
VLPP (cm H2O)	82,52	120,3	P<0,001	76,6	76,15	P=0,866
Score	73	94	P<0,001	70,4	83	P=0,001
Pads(n°/day)	2,5	0,67	P<0,001	2,5	1,7	P=0,078
Leaks(n°/day)	4	1	P<0,001	3,5	2	P=0,063
Patients dry	0	8	-	0	0	-
Controlled Overactivity	6	1	-	2	0	-
Uncontrolled overactivity	2	2	-	1	1	-

#4 patients with uncontrolled overactive bladder, were withdraw, due impossibility to determinate VLPP.
*The numbers correspond to average of parameters.

TABLE 2- Relationship of the initial valsalva leak point pressure (VLPP) to the clinical parameters improvement.

	BELOW 60 cmH2O(n=8)			BETWEEN 61-90 CmH2O(n=10)			ABOVE 91 cmH2O (n=12)		
	Before	after	Significance	Before	After	Significance	Before	After	Significance
VLPP (cm H2O)	54,2	76	P=0,71	80,8	103,9	P=0,23	102,1	118,7	P=0,002
Score	69,3	83,7	P=0,002	76,8	93,2	P=0,001	69,5	90,2	P=0,003
Pads (n°/day)	3,6	2	P=0,030	2,5	0,6	P=0,029	2,1	0,9	P=0,35
Leaks (n°/day)	4,5	2,1	P=0,023	3,3	0,9	P=0,039	3,7	1,5	P=0,008
Patients dry	0	0	-	0	3	-	0	5	-

CONCLUSIONS: Correlation between VLPP variation and clinical parameters changes could be verified after treatment. Improvement in the control of bladder contraction was found mainly in the less overactive patients, not allowing statistical conclusions. The severity of incontinence offers worse prognosis to the improvement of VLPP.

1- Extracorporeal magnetic innervation therapy for stress urinary incontinence: Urology 53(6), 1108-1111, 1999.

2- Quality of life of persons with urinary incontinence: development of a new measure. Urology 47:67-72 ,1996.