72

Chang P[1], Wu C[1], Huang S[1], Chen Y[1], Huang H[1], Hsu Y[1], Hsieh M[1]
1. *Chang Gung Memorial Hospital, Linkou medical center*

EXTRACORPOREAL MAGNETIC INNERVATION INCREASES FUNCTIONAL BLADDER CAPACITY AND QUALITY OF LIFE IN PATIENTS WITH URINARY INCONTINENCE AFTER ROBOTIC-ASSISTED RADICAL PROSTATECTOMY

Hypothesis / aims of study

Post-prostatectomy incontinence (PPI) is a major complication that has substantial effects on health-related quality of life. Since first described in 2000, robotic-assisted radical prostatectomy (RARP) has become a popular approach to radical prostatectomy. Extracorporeal magnetic innervation (ExMI) is a preferred and noninvasive method of treatment in urinary incontinence and has been proved to be effective on PPI(1). For the first time in literature, we evaluate the effects of ExMI in patients with PPI after RARP, especially with regard to disease specific health-related quality of life.

Study design, materials and methods

From September to December 2014, patients with PPI after RARP were enrolled for study. ExMI treatment session for 20 minutes was provided twice a week for two months. Number of voids, number of incontinence and urgency episodes, mean and maximum voided volume per micturition was recorded in a three-day bladder diary. Quality of life was assessed using the Urogenital Distress Inventory (UDI-6), Incontinence Impact Questionnaire (IIQ-7), and International Prostate Symptom Score quality of life question (IPSS-QoL). All assessments were conducted before and within two weeks after ExMI treatment. A favorable outcome was defined as an IPSS-QoL score less than two, or more than two points decrease compared with pre-treatment score.

Results

A total of 13 patients with a mean age of 69.3± 4.8 years were enrolled. Nine patients were enrolled within one year after RARP. Four patients, because of persistent symptoms, were enrolled 4.0 to 7.5 years after RARP.

Table 1. Urinary symptoms and quality of life scores at baseline and after ExMI (N=13)

	Pre-ExMI	Post-ExMI	P value
Incontinence episodes/ 3 days	9.15±4.83	5.85±4.53	0.002
Urgency episodes/ 3 days	4.77±2.24	3.64±2.19	0.182
Mean void times per day	10.45±2.47	9.17±2.27	0.033
Mean voided volume (ml)	120.97±29.26	132.85±36.91	0.060
Functional bladder capacity (ml)	243.46±80.37	289.23±87.22	0.005
UDI-6[a]	7.15±2.79	5.31±2.50	0.038
IIQ-7[b]	10.92±6.08	8.69±5.69	0.112
IPSS-QoL[c]	4.0±1.29	2.77±1.30	0.002

Table 2. Association between patient outcome after ExMI and selected risk factors (N=13)

	Unfavorable outcome (n=5)	Favorable outcome (n=8)	Odds ratio (95% CI)
Age > 70 years	5	2	1
≦ 70 years	0	6	28.6 (1.12-731.4)
BMI ≦ 24	1	4	1
> 24	4	4	0.25 (0.02-3.34)
PSA ≦ 20	3	5	1
> 20	2	3	0.9 (0.09-8.90)
Prostate volume ≦ 40 ml	3	5	1
> 40 ml	2	3	0.9 (0.09-8.90)
Anterior urethropexy No	3	3	1
Yes	2	5	2.5 (0.25-24.72)
Nerve sparing No	2	2	1
Yes	3	6	2.0 (0.18-22.06)
Bladder neck preservation No	2	4	1
Yes	3	4	0.66 (0.07-6.41)
Pathological T stage T2	3	5	1
≧T3	2	3	0.9 (0.09-8.90)
Positive surgical margin No	3	4	1
Yes	2	4	1.5 (0.16-14.42)
Early ExMI (<1 year) No	3	1	1
Yes	2	7	10.5 (0.67-165.11)

Interpretation of results

ExMI improves the quality of life in PPI patients. Patients' functional bladder capacity was also significantly improved after ExMI, emphasizing the role of detrusor dysfunction in PPI. Patients less than 70 year-old improved the most after ExMI. Since there is a progressive decline in urinary continence as the patient ages, the unfavourable response to ExMI in older patients may result from persistence of PPI, or the natural course of aging. As patients who had undergone RARP more than 1 year ago also benefited from ExMI, it may serve as an alternative for treating patients suffering from long-term PPI.

Concluding message

ExMI decreases the number of incontinence episodes, increases functional bladder capacity and quality of life in patients with PPI after RARP, and should be considered as a treatment method for all such patients.

References

1. Yamanishi T, Kamai T, Yoshida K. Neuromodulation for the treatment of urinary incontinence. Int J Urol 2008;15:665-72

Disclosures

Funding: None of conflict of interest or funding **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Chang Gung Medical Foundation Institutional Review Board **Helsinki:** Yes **Informed Consent:** Yes