

Treatment of urinary incontinence after radical prostatectomy with radiofrequency: New concept

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Hypothesis/ aims of study

Radiofrequency (RF) is a type of high frequency current, that when used with a temperature above 41°C promotes an increasing in the production of collagen (neocollagenogenesis) and an improvement in tissue vascularization. To describe safety and evaluate the clinical effect of radiofrequency in urinary incontinence after radical prostatectomy (UIARP).

Materials and methods

This is a pilot study of ten volunteers. We included men up to 65 years of age, with clinical complaints of IUPPR and who had post-void residue (PVR) <50ml verified by abdominal ultrasound. Patients with less than 45 postoperative days, urge urinary incontinence (UUI), impaired comprehension, chronic neurological degenerative diseases, implantable cardioverter defibrillator and iatrogenic metal material in the pelvic area were excluded. The data collection was started by means of a basic anamnestic questionnaire. In addition, evaluation of the pelvic floor muscle strength was performed. To evaluate the clinical response, ultrasound (US), 1 hour Pad Test (incontinent with weight \geq 1g), Modified Visual Analogue Scale (VAS) for urinary incontinence (UI) and self-administered questionnaires were performed before and after treatment: ICIQ-SF, ICIQ-OAB, IIEF and SF-36. At the end, the Likert scale was used to measure the degree of satisfaction. Patients underwent five sessions of non-ablative endoanal RF. The temperature used was 41°C and was maintained for 2 minutes, with the therapist performing slow half-moon movements (Figure 1). Safety has been verified by reporting or observing adverse effects and through US.

Registration Number: NCT03048799 Subjects: HUMAN Ethics Committee: Ethics Review Board from Bahiana School of Medicine and Public Health, Salvador-Bahia (Brazil), in December 2016 (protocol: CAAE - 58851916.9.0000.5544)



Figure 1 – Application with rotational movements
(Source: Image courtesy of researcher in charge)

Results

The mean age of patients was 57.5 ± 4.9 years. The median level of muscle strength was 3 (3.0-3.2). The US showed no change in PVR after treatment, from 0.0 ml (0.0-1.7) to 0.0 ml (0.0-0.2) ($p = 0.345$). The initial Pad Test was 6.5 g (1.7-50.0) and final 2 g (0.0-9.0) ($p < 0.01$) (Table 1). ICIQ-OAB indicated decreasing in irritative micturition symptoms, from 6.0 (4.7-8.7) to 5.0 (0.7-6.7) ($p = 0.01$). The ICIQ-SF, IIEF and SF-36 showed no difference. The EVA showed a significant decrease from 7.0 (5.0-8.5) to 4.0 (1.7-5.0) ($p = 0.01$). Two patients showed no changes in degree of satisfaction, six were satisfied and two very satisfied. Four participants reported pain at the beginning, while the anal electrode was inserted. The pain ceased during the treatment.

Table 1 - Evaluation of urinary incontinence by measuring pad weight (in grams), during one hour Pad Test of 10 patients with UIARP, before and after five RF sessions.

Patient	Initial Pad Test Variation (g)	Final Pad Test Variation (g)	P Value [§]
01	01	00	
02	50	18	
03	01	00	
04	07	06	
05	06	00	< 0,01
06	02	02	
07	06	02	
08	50	22	
09	50	01	
10	38	01	

g= grams
§Wilcoxon Test.

Concluding message

RF demonstrated to be a safe technique to UIARP treatment, with positive results in both clinical response and quality of life, promoting patient satisfaction.

Source: The author.

References

- Lukban JC. Transurethral Radiofrequency Collagen Denaturation for Treatment of Female Stress Urinary Incontinence: A Review of the Literature and Clinical Recommendations. *Obstet Gynecol Int*. Hindawi Publishing Corporation; 2011;2012:1-6.
- Smith WB, Melton W, Davies J. Midsubstance Tendinopathy, Percutaneous Techniques (Platelet-Rich Plasma, Extracorporeal Shock Wave Therapy, Prolotherapy, Radiofrequency Ablation). *Clin Podiatr Med Surg* [Internet]. Elsevier Inc; 2017;34(2):161-74.
- Lordelo P, Boas AV, Sodre D, Valverde D, Lemos A, Tozetto S, Brasil C. New Concept for Treating Female Stress Urinary Incontinence with Radiofrequency. *International Braz J Urol*; 2017; 43(x).

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