**Efficacy of Transcutaneous Temperature Controlled Radiofrequency for Overactive Bladder**

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**Objectives**: To evaluate the safety, tolerability, and clinical efficacy of transcutaneous temperature controlled radiofrequency (TTCRF) on anterior vaginal tissue for overactive bladder.

**Methods**: 120 women, ages 21-85, with overactive bladder included in the study. Each patient received 3 sessions at intervals of about 1 month. Treatment was performed using a slim S-shaped probe with a stamp-sized metal radiofrequency emitter on one surface of the tip (10 minutes total time on average). Full length treatment of the anterior vagina with concentration on the pubocervical fascia was performed. Tissue temperature during therapy was elevated to and maintained between 40 degrees C and 45 degrees C. No anesthesia was required. After treatment patients immediately resumed normal routines, including exercise and sexual activities.

**Results**: 109/120 (91%) patients overactive bladder without incontinence reported a reduction of OAB symptoms by at least one third, 33%. 55/120 (46%) patients with overactive bladder without incontinence reported a 50%+ reduction in OAB symptoms. Of these patients 39/120 (33%) completely resolved their OAB symptoms. 14 patients (12%) had more moderate symptoms reduction of 25% and less. All 14 of these patients had overactive bladder with incontinence. All patients noticed some reduction in OAB symptoms over baseline. Results for nocturia were similar.

**Conclusions**: TTCRF is an effective non-pharmacologic, non-surgical option for women with overactive bladder symptoms. Treatment have a visible tightening effects on vaginal mucosa and also appears to increase local blood flow, resulting in increased vaginal tightness and moisture. Improvement of symptoms in overactive bladder without incontinence is more dramatic than with overactive bladder with incontinence.

**References**

[Mulholland RS](http://www.ncbi.nlm.nih.gov/pubmed/?term=Mulholland%20RS%5bAuthor%5d&cauthor=true&cauthor_uid=21824541). Radio frequency energy for non-invasive and minimally invasive skin tightening. Clin Plast Surg 2011;38(3):437-48.

Alinsod RM. Temperature controlled radiofrequency for vulvovaginal laxity. PRIME 2015;3(4):16-21.

Millheiser LS, Pauls RN, Herbst SJ, Chen BH. Radiofrequency treatment of vaginal laxity after vaginal delivery: nonsurgical vaginal tightening. J Sex Med 2010;7(9):3088-95.

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