

DAILY TRANS CUTANEOUS ELECTRICAL NERVE STIMULATION (DTENS) AFTER RADICAL PERINEAL PROSTATECTOMY: A FREE COST EFFECTIVE BIOFEEDBACK TECHNIQUE IN THE TREATMENT OF POST OPERATIVE URINARY INCONTINENCE

Aims of Study

Non surgical treatment of post prostatectomy incontinence has been reported as moderately successful. PFMT is the mainstay therapy and improvement has been reported when used or in combination with rectal electrical stimulation biofeedback or TENS. At least two recent randomised controlled trials have challenged the assumption that PFMT or PFMT plus electrical stimulation or biofeedback are effective treatments for post radical prostatectomy incontinence but these two studies individually are not sufficient to fully evaluate these therapies. Objective of this randomized study is to determine the effects on post radical prostatectomy incontinence of the conservative management based on daily transcutaneous electrical nerves stimulation (DTENS) and pelvic muscle floor training (PFMT) versus PMFT alone.

Methods

70 consecutive patients who underwent radical perineal prostatectomy for localized prostatic cancer have been en-rolled in randomized trial. In Group 1 36 patients have been treated by pelvic floor muscle treatment (PFMT) based on Kegel's exercises (1949). In Group 2 34 patients have been treated by PFMT and daily-transcutaneous electrical nerves stimulation (DTENS). Continence has been defined accordingly to Catalona's definition. The severity of incontinence was analyzed according to the number of pads daily used, subjective visual analogue scale of improvement and a 24 hour pad test performed at each post operative control.

Results

In Group 1 24% became dry postoperatively in 1 month, 65% in 4 months and 76% in 6 months. The mean number of pads used daily decreased from 4 at 1 month, 2 at 4 months and 1,5 pads at 6 months. In Group 2 28% became dry postoperatively in 1 month, 82% in 4 months and 87% in 6 months. The mean number of pads used daily decreased from 4,5 at 1 month at 2 at 4 months and 1 pads at 6 months.. Age and pathological local staging influenced the recovery of urinary continence after surgery ($p < 0,05$). PFMT assured a maximal speed recovery from incontinence of 40 grammes a month, while when combined with DTENS the maximal speed has been found of 100 grammes a month ($p < 0,05$). Frequency has been found mandatory before continence status ($p < 0,005$) in both groups. Nocturnal continence has been found also mandatory prior to daily continence in both groups ($P < 0,005$). Nocturnal continence within 1 month from catheter removal has been found the only post surgical predictor of complete continence status within 6 months from surgery in both groups ($p < 0,05$).

Conclusions

Differences between the two groups in the percentage of continent patients were highest in the first 4 months, suggesting that conservative therapy should start immediately after the operation. Urine leakage occurred mostly during exertion and has been defined as "gravitational". The 24 hour pad test has not been found significantly different between groups while fatigue of the striated muscles of the pelvic floor led to increase daily loss of urine. In the group treated by PFMT and DTENS improvement in both duration and degree of gravitational incontinence (in term of daily pads) was significantly better than in the control group. No difference between the two Groups has been found in overall post surgical continence rate. Pelvic floor re-education plus daily transcutaneous electrical nerve stimulation should be considered as a first line option conservative treatment in the first 6 months after radical perineal prostatectomy.