

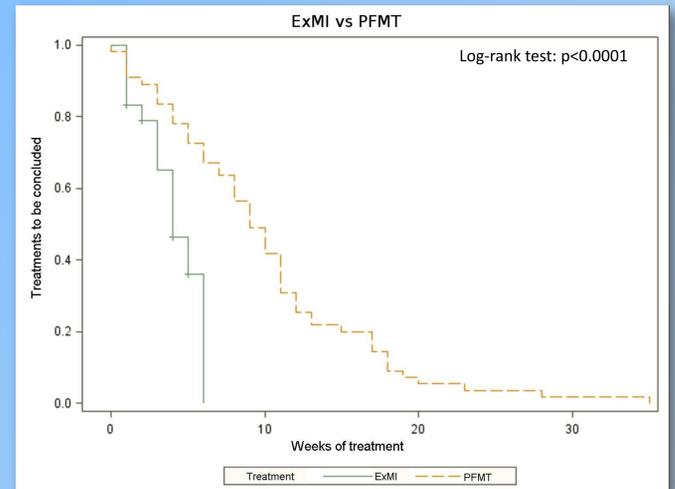
# Long-term effects of pelvic floor muscle training (PFMT) vs extracorporeal magnetic innervation (ExMI) on post-prostatectomy urinary incontinence.

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## Introduction & Objectives

Pelvic floor muscle training (PFMT) and Extracorporeal magnetic innervation (ExMI) are used for treating urinary incontinence (UI). PFMT consists of voluntary contractions of the pelvic muscles, performed by patients to strengthen them and develop automatic contraction mechanisms. Contractions compress the urethra and reduce urine leakage<sup>1</sup>. ExMI uses an armchair in which a magnetic field induces contractions of the pelvic muscles, thus strengthening them. PFMT and ExMI reduce urinary incontinence after radical retropubic prostatectomy<sup>1</sup> (RRP). ExMI can reduce by 40% the time needed to lower leakages to 10 gr/day or less<sup>2</sup>, as shown in the graph. Few data exist regarding long-time effects of PFMT and ExMI<sup>3</sup>; this study compares the effects of PFMT and ExMI on urinary incontinence after radical retropubic prostatectomy, during a follow-up period of 12 months after rehabilitation



## Materials & Methods

We recruited a non-randomized sample of 65 PFMT and 23 ExMI patients, rehabilitated for urinary incontinence after RRP for prostate-limited cancer. They had begun rehabilitation after an average of 4 weeks after surgery, and quantified leakages with 24-hours pad tests<sup>1</sup>. Before the treatments, we had assessed their low urinary tract symptoms with the International Prostate Symptom Score<sup>5</sup>, which had already proven to suitable for these patients<sup>2</sup>. The two groups had comparable initial characteristics, as shown in the following table.

|                                     | Value in the sample | Difference between the two groups |
|-------------------------------------|---------------------|-----------------------------------|
| Median age                          | 69.5                | p>0.05                            |
| Median BMI (kg/m <sup>2</sup> )     | 26.4                | p>0.05                            |
| Median IPSS                         | 7                   | p>0.05                            |
| Median leakage before treatment (g) | 180,1               | p>0.05                            |
| Median leakage after treatment (g)  | 5.0                 | p>0.05                            |

PFMT patients had received one rehabilitation session per week (median rehabilitation time: 12 weeks) in the outpatients' service, and performed daily exercises at home<sup>1</sup>; ExMI patients had received 3 sessions per week (50 Hz, 5" of stimulation, 5" of inactivity, 20' each session, six weeks of treatment) without home exercises. After rehabilitation, both groups followed the same protocol of daily contraction exercises for maintenance<sup>1</sup>. We assessed all patients at 3, 6, and 12 months after rehabilitation, with 24-hours pad tests. We analyzed follow-up data with Cohen's "k" concordance coefficient, and Spearman's "rho" correlation coefficient.

## Results

During the follow-up period, all patients maintained the results achieved with rehabilitation. Concordance increases over time, especially in the PFMT group; this suggests a progressive stabilization of leakages. The low concordance coefficient in the PFMT group, between the end of rehabilitation and the 3<sup>rd</sup> month, is due to slight variations in leakages (median=5 grams). The correlation coefficient, which is less sensitive to small variations, shows that leakages are substantially stable (rho=0.81, p<0.001). Between six and twelve months, there are no more variations in the leakages reported by the patients, in both groups. All concordances are statistically significant (p<0.0001). The following table summarizes our results.

|                                | PFMT         | ExMI         | Leakage difference between the groups |
|--------------------------------|--------------|--------------|---------------------------------------|
| End of rehabilitation-3 months | k=0.48, n=60 | k=0.70, n=11 | p=0.38                                |
| 3 months-6 months              | k=0.61, n=48 | k=0.70, n=11 | p=0.21                                |
| 6 months-1 year                | k=1.00, n=33 | k=1.00, n=7  | p=0.61                                |

## Conclusions

Our patients maintained the results of rehabilitation during the year; both PFMT and ExMI give permanent results at one year. The exercises performed after the end of treatments help patients maintaining their muscle strength, and their ability to automatically perform contractions in situations at risk for leakages. Nurses play a fundamental educational role, since patients must understand and perform the exercises correctly to achieve good results. Overall, considering its characteristics of speed in the muscle strengthening process, ExMI is a valuable option to reduce rehabilitation times, allowing nurses to intensify the educational sessions regarding maintenance exercises. This would lead patients to even better leakages control, thus reducing the number of months required to stabilize their results

## References

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