

## PHYSIOTHERAPY FOR WOMEN WITH RECURRENT URINARY TRACT INFECTION: A PROMISING APPROACH.

### Hypothesis / aims of study

Urinary tract infection is the second more common infectious disease in women worldwide and its recurrence rate is high [1]. This condition may reduce patient's quality of life once it imposes limitations on daily living activities and restricts social participation. The aim of this study is to describe a case series of women diagnosed with recurrent urinary tract infection (RUTI) who underwent physical therapy (PT) intervention.

### Study design, materials and methods

This is a case series reporting positive effects of PT intervention on twelve women diagnosed with RUTI, defined as having 3 or more symptomatic infections over the last 12 months [2]. All patients were referred to pelvic floor physiotherapy by their urogynecologist. PT treatment were delivered once, twice, three times a week or monthly, according to clinical and functional diagnosis by the same physical therapist, with 32 years of experience in the treatment of pelvic floor dysfunctions. Treatment comprised of: 1) Reeducation of pelvic floor muscle (PFM) function using kinesiotherapy, manipulative techniques, local heat, breathing and relaxation exercises, according to the pelvic floor muscle function diagnosis; 2) postural education aiming at the assumption of adequate posture that favours bladder emptying; 3) reeducation of muscle coordination between pelvic floor and abdominal muscles in order to guarantee that, while the first relax, the second contract isometrically, favouring micturition; 4) behavioural therapy aimed at organizing the micturition frequency and liquid intake over 24h as well as at the improvement of bowel habits; 5) orientation/certification of adequate hygiene habits of genital region; 6) treatment of associated pelvic floor dysfunction such as anal and urinary incontinence and dyspareunia [1]. Women were treated whenever signs and symptoms of urinary tract infection were absent, even though they may have presented a positive bacteriuria.

### Results

All the twelve women had been previously treated through medication but with no success in effectively controlling the RUTI episodes. None of them had been through PT intervention before. Patients were aged from 28 to 88 years [median=64.5; IQ=14.3]; median of 2.5 (IQ=1.3) pregnancies and deliveries, 74.7% being vaginal delivery. Only one was nulliparous. Four women (33.2%) had undergone pelvic surgeries (3 hysterectomies, 2 cystopexies, 1 sling, 1 colpocleisis, 2 haemorrhoidectomy, 1 perineoplasty). They have had symptoms of urinary tract infection (UTI) for a median of 5 years (IQ=2.5) and presented between 3 to 9 UTI episodes in the 12 months before the beginning of physical therapy intervention (median=4.5 episodes; IQ=3.5). Overall, there were 19 reports of medication intake. At the beginning of the PT intervention patients were taking macrodantin® (58.1%) and cranberry juice (33.2%). The distribution of pelvic floor dysfunction symptoms were: urgency (100%), stress urinary incontinence (33.2%), urgency urinary incontinence (16.6%), anal incontinence (41.5%), bowel constipation (16.6%), sexual disorders (49.8%) and pelvic organ prolapses (POP) (8.3%). The pelvic floor muscles (PFM) diagnosis [3] has identified: muscle power median of 1.8 (IQ=1.1) as measured by the Modified Oxford Scale (MOS); muscle endurance median of 3.0 sec (IQ=3.3sec), impairment in the control and coordination (50.0% either excessively activated synergistic muscles or had their contraction/relaxation slower than expected) and muscle tone impairment (increased PFM tone = 58.3%; reduced PFM tone = 16.7%), measured by the Dietz scale (grades 1 and 2 categorized as reduced PFM tone; grades 4 and 5 categorized as increased PFM tone). PT intervention results: patients underwent from 4 up to 42 PT sessions (median=5.5; IQ=4.3) over a period of 4 to 45 months (median=28.5; IQ=7.5). During this period UTI episodes ranged from 0 to 3 (MD=0; IQ=1). Nowadays 33.2% of patients keep taking cranberry juice and 16.6% are in use of macrodantin®. Also, 66.7% became asymptomatic of pelvic floor dysfunction, while three (25.0%) participants present mild dyspareunia, one (8.3%) reports soiling, one (8.3%) occasional episodes of urge incontinence in the morning, one complains of SUI with full bladder, and one (8.3%) shows POP. The most recent evaluation of the pelvic floor muscles function revealed: muscle power median of 2.8 (IQ=1.1); muscle endurance median of 10.0sec (IQ=4.8sec), 91.7% of women improved control and coordination and muscle tone. Only one (8.3%) kept with increased PFM tone and another present slow relaxation of PFM. All, but one, women were committed to treatment. They regularly did the exercises at home and/or during their regular physical activities. They were also compliant to behavioral therapy. All of them have been discharged from regular physiotherapy, but under follow up of 3 or 6 month intervals depending upon clinical and functional status.

### Interpretation of results

Results were encouraging once PT intervention, as an adjunct therapy, has reduced the occurrence of RTUI episodes as well as medication intake. The possible reasons for these results were the increased efficiency in bladder emptying, associated with reduction in the contaminated environment due to the treatment of pelvic floor dysfunction, as well as to the improvement of the PFM functions. Our clinical experience suggests that commitment to PT treatment by regularly following all behavioural instructions are a *sine qua non* condition for the treatment success.

### Concluding message

The physiotherapy approach for pelvic floor muscle function rehabilitation leading to an increase in the efficiency of emptying bladder, and to an improvement of pelvic floor dysfunctions, as an adjunct therapy to medical treatment, is a conservative and effective approach in RUTI. Such promising results lead the hospital team of urogynecologists and physiotherapists to develop a RUTI protocol treatment which includes pelvic floor muscle function rehabilitation to be implemented as a routine. Regular follow ups (3 to 6 months) with a physical therapist specialist in the treatment of pelvic floor dysfunctions are necessary to guarantee

permanent behavioral and functional benefits from this treatment. Future studies with higher level of evidence should be developed to corroborate the results presented here.

#### References

1. Lukacz ES, Sampsel C, Gray M, MacDiarmid S, Rosenberg M, Ellsworth P, Palmer MH. Healthy bladder: a consensus statement. *Int J Clin Pract*, October 2011, 65(10):1026–1036.
2. Haylen BT et al. An International Urogynecological Association (IUGA)/International Continence Society (ICS) joint report on the terminology for female pelvic floor dysfunction. *Int Urogynecol J* (2010) 21:5-26.
3. Monteiro MV, Gontijo RR, Rodrigues TS, Barros JS, Fonseca AM, Figueiredo EM, Triginelli SA. Pelvic floor muscle functions in continent and incontinent women. *Int Urogynecol J* (2012) 23 (Suppl 2):S76.

#### Disclosures

**Funding:** None **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** This is a case series report of women regularly attended at a physical therapy office. All women signed a informed consent. **Helsinki:** Yes **Informed Consent:** Yes