

IS INCREASED PELVIC FLOOR MUSCLE TONE RELATED WITH MUSCULOSKELETAL AND PELVIC FLOOR DYSFUNCTION IN WOMEN?

Hypothesis / aims of study

Muscular tone is defined by the ICF as muscular rigidity [1]. It is an important property of the neuromusculoskeletal system that is, differently from other physiotherapy areas, undervalued in the pelvic floor physical therapy practice. However, impairments in the PFM tone might be more frequent than expected. The association between low tone of the PFM and symptoms of urinary incontinence was already demonstrated [2]. Impairments in PFM tone, specially increased tone, seem to be a common sign in women with sexual dysfunction. Furthermore, increased PFM tone was previously identified as related with musculoskeletal impairments in other body parts [3]. Therefore, this PFM function needs more attention. We hypothesized that the occurrence of increased PFM tone is high and is related with pelvic floor dysfunction symptoms as well as with musculoskeletal impairments in other body parts than the pelvic floor. The goals of this study were threefold: 1) to describe the occurrence of increased PFM tone in women with pelvic floor dysfunction who underwent pelvic floor physiotherapy; 2 and 3) to investigate the relation between increased PFM tone and symptoms of pelvic floor dysfunction, as well as with symptoms/signs of musculoskeletal impairments in other body parts of women with pelvic floor dysfunction who underwent pelvic floor physiotherapy.

Study design, materials and methods

Data were retrieved retrospectively from the physiotherapy evaluation files of women with pelvic floor dysfunction, who attended a private practice physiotherapist, expert in women's health for 32 years, from January, 2011 to August, 2013. The following data were collected by the same physiotherapist, in accordance with ICS terminology whenever it was possible: 1) pelvic floor dysfunction symptoms: urinary incontinence/bladder storage, voiding, pelvic organ prolapse (POP), sexual (dyspareunia) and anorectal dysfunction (storage and emptying bowel symptoms); 2) increased PFM tone: evaluated by digital palpation according to the Dietz scale [2] and categorized as such when grades 4 and 5 were identified; 3) identification of the following musculoskeletal symptoms/signs: pain complaint, postural misalignments, impairment in flexibility and trigger points categorized by the following body parts (neck and upper limbs, trunk, pelvis and lower limbs). Descriptive statistics was used to characterize sample according to PFM tone and pelvic floor dysfunction symptoms. Chi-square tests were used to test the correlation between increased PFM tone and pelvic floor dysfunction; and between increased PFM tone and musculoskeletal symptoms/signs. Statistical analysis was performed using SPSS 17.0 for Windows (SPSS, Inc., Chicago, IL), at 0.05 significance level.

Results

Data from 330 patients with mean age of 55.7 years (SD=16.9) were retrieved. Increased PFM tone was documented in 163 (49.4%) women. The most reported pelvic floor dysfunction symptoms in the whole sample were urinary incontinence/bladder storage symptoms (53.0%), followed by symptoms of sexual dysfunction (7.9%), POP (7.0%), emptying bowel symptoms (5.5%), anal incontinence (5.2%) and voiding (2.7%). Musculoskeletal symptoms/signs were distributed as follows: neck/upper limbs (6.7%), trunk (27.6%) and pelvis/lower limbs (7.0%). Increased PFM tone was positively correlated to symptoms of sexual ($p<0.001$) and anorectal dysfunctions (emptying bowel symptoms) ($p<0.001$). Also, increased PFM tone was positively correlated to musculoskeletal symptoms/signs in the trunk ($p=0.028$).

Interpretation of results

As hypothesized, increased PFM tone was a common impairment in women with pelvic floor dysfunction. Also, it was associated to dyspareunia and emptying bowel symptoms. It is not difficult to understand the influence of a rigid PFM to the painful intercourse or to the process of emptying bowel. These results indicate that we should pay attention to this musculoskeletal function as do physiotherapists from other areas. PFM tone normalization is an important but challenging goal to pelvic floor physiotherapists. The association between increased PFM tone and musculoskeletal symptoms/signs in the trunk suggests the existence of myofascial force transmission between pelvic floor and trunk muscles. This relation was previously reported to other muscle groups [3]. The myofascial force transmission between pelvic floor and trunk muscles should be further investigated since it might be an important source of information about PFM function in general. It also might orient new holistic physiotherapeutic approaches for women with PFD.

Concluding message

Our unique results indicate the need to systematically evaluate the pelvic floor muscle tone in women with pelvic floor dysfunction as well as its relation with the function of other muscles. Myofascial force transmission between muscles might reveal which are the muscles to be targeted at. Prospective studies investigating such force transmission between pelvic floor and trunk muscles should be further investigated.

References

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Disclosures

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