219

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PELVIC PHYSIOTHERAPY AND MORPHOLOGICAL CHANGES IN PELVIC FLOOR / ORGAN POSITION CHANGES: A SYSTEMATIC REVIEW

Hypothesis / aims of study

Pregnancy, vaginal delivery and various other conditions associated with intraabdominal pressure increases or neurological changes can lead to reduced muscle thickness and increased urogenital hiatus and abnormal bladder neck mobility. This may contribute to urinary and fecal incontinence and pelvic organ prolapse (POP).[1]

The aim of this study was to evaluate the effect of Pelvic Physiotherapy (PP) on morphological changes and objective improvement of urine incontinence (UI) and fecal incontinence (FI) and POP.[2]

Study design, materials and methods

The composition of this systematic review was based on the PICO model[3] and was orientated on the PRISMA checklist, published on www.prisma-statement.org (Registrationnumber 60847, April 2nd 2017).

Search strategy

The electronic database PubMed was systematically searched using following search terms: (((((((((pelvic floor[Title]) OR pelvic floor muscle[Title]) OR physical therapy[Title]) OR muscle training[Title]) OR physiotherapy[Title]) OR exercise[Title]) OR exercise therapy[Title]) OR training[Title])) AND ((((((((((((((morphological change*[Title]) OR functional change*[Title]) OR structural change*[Title]) OR hypertrophy[Title]) OR strength*[Title]) OR power[Title]) OR urethral sphincter[Title]) OR hiatus urogenitalis[Title]) OR levator[Title]) OR levator hiatus[Title]) OR levator ani[Title]) OR anal sphincter[Title]) OR urethral size[Title]) OR hiatus urogenitalis[Title]) AND pelvic floor[Title]). In addition reference lists were scanned.

Studies with operative or pharmaceutical therapy only, studies without information about interventions, morphological or positional changes, or studies that included women pre- and one year postnatal were excluded. The language was restricted to English and German. Eight studies remained for analysis. (Figure 1).

Data extraction

Two investigators screened all titles, abstracts and full texts independently for eligibility. In case of disagreement, a discussion took place until consensus was achieved. The quality of the included studies and the risk of bias were analyzed with „The Cochrane Collaboration´s tool for assessing risk of bias“. The following data were extracted: Characteristics of the subjects, characteristics of the intervention and the control group (if present), duration of intervention, outcomes including morphological changes and organ position changes, as well as changes in symptomatic and quality of life (if present).

Results

Studies investigated effects of PP on female patients with incontinence and POP and on male patients before prostatectomy. No studies were found dealing with the effect of PP on healthy people as a preventive measure. We found five clinical trials and three RCT´s.

Length of treatment ranged between 30 days and six month, with varying decrease of supervision by health care providers. In all studies assessment of correct pelvic floor contraction was performed. Finding after PP included several markers of morphological changes (Table 1).

Morphological changes

Urethral sphincter	increased thickness and cross sectional area
PFM	increased thickness and stiffness
hiatal area	decreased hiatal area at rest, shortened muscle length
bladder neck	reduced mobility during coughing, elevated position during rest and contraction
Rectum	Narrowing of anorectal angle

Table 1

All studies showed significant changes in pelvic floor morphology and / or organ position after PP. There was also a reduction of the symptomatic.

Interpretation of results

Supervised PP of approximately 12 weeks duration with assessment of correct pelvic floor contraction leads to morphological changes and reduction of symptoms in patients with UI, FI and POP.

There is a risk considerable of bias because of the small number of patients in the included studies and the poor reportings of therapie in most of the studies.

Since success of PP appears to depend on cooperation, compliance and diligence of the patient and the ability of the therapist for motivational support, a standardized approach of reduce would be helpful.

Concluding message

In our systematic review PP showed effects on muscular structures and lead to measurable changes of position of pelvic organs (bladder neck and rectum). These results should be interpreted with caution, because of small patient number and risk of bias.

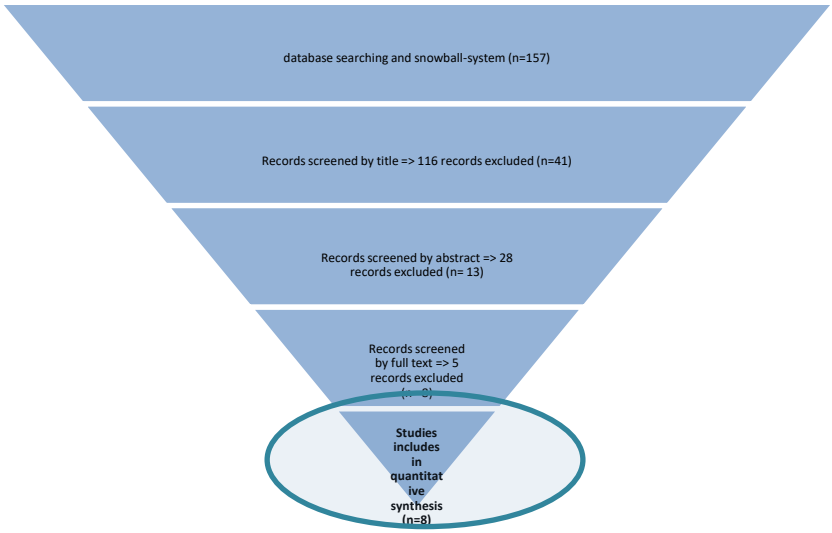

Fig. 1

References

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Disclosures

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