

PELVIC FLOOR MUSCLE FUNCTION AND DYSFUNCTION IN THE PERIPARTUM PERIOD IN WOMEN WITH AND WITHOUT DIASTASIS RECTI ABDOMINIS

Hypothesis / aims of study

The relationship between the pelvic floor muscle (PFM) and the abdominals is controversial and much debated. It has been postulated that the PFM may be weaker in women with diastasis recti abdominis and that women with diastasis may have more pelvic floor dysfunctions than women without diastasis (1). In general, the research on diastasis recti abdominis is sparse and a recently published systematic review has concluded that there is an urgent need for more research (2). The aim of the present study was to compare vaginal resting pressure, PFM strength and PFM endurance in women with and without diastasis recti abdominis at gestational week 21 and at 6 weeks, 6 months and 12 months postpartum. Furthermore to compare prevalence of urinary incontinence (UI) and pelvic organ prolapse (POP) in the two groups at the same assessment points.

Study design, materials and methods

Three hundred nulliparous pregnant women participating in a prospective cohort study giving birth at the same public hospital and able to understand the native language were included in the study. Exclusion criteria were previous miscarriage after gestational week 16. Ongoing exclusion criteria were premature birth < 32 weeks, stillbirth, serious illness to mother or child, recruitment to pelvic floor muscle training in a randomized controlled trial and subsequent pregnancies after 6 weeks of gestation. Diastasis recti abdominis was evaluated with fingerbreadth and cut off point for diastasis was set to two fingers assessed by palpation 4.5 cm above, at, or 4.5 cm below the umbilicus. The method has an intra- and inter-observer weighed kappa value of 0.7 and 0.5, respectively. Vaginal resting pressure (cm H₂O), PFM strength (cm H₂O) and endurance (cm H₂Osec) were assessed by a vaginal balloon connected to a high precision pressure transducer. The method has been found to be responsive, reliable and valid when used with simultaneous observation of inward movement of the perineum during contraction (3). UI was assessed by ICIQ-UI-SF questionnaire and POP with POP-Q system. The results are presented as means with 95% CI. Comparison between women with and without diastasis recti abdominis was analyzed with Student t-test and Chi-square test. P-value was set to < 0.05.

Results

At gestational week 21 women with diastasis recti abdominis had statistically significant better PFM function than women without diastasis: VRP (3.06 cm H₂O (95% CI: 0.70;5.42)), PFM strength (5.09 cm H₂O (95% CI: 0.76;9.42)) and PFM muscle endurance (47.08 cmH₂Osec (95% CI: 15.18;78.99)). There were no statistically significant differences between women with and without diastasis recti abdominis in any PFM variables 6 weeks, 6 months and 12 months postpartum. No significant difference was found in prevalence of UI in women with and without diastasis recti abdominis at any time points. Six weeks postpartum 15.9% of women without diastasis had POP versus 4.1% in the group with diastasis (p=0.001). There was no significant between group differences in prevalence of POP at any other assessment points.

Interpretation of results

Contradictory to the hypothesis women with diastasis recti abdominis had higher VRP, PFM strength and endurance at gestational week 21, but there were no differences between groups in any of the PFM variables at any assessment points postpartum. Women with diastasis were not more likely to have UI or POP. Health care providers should use caution when explaining about possible associations between PFM, abdominal muscle function and pelvic floor dysfunctions.

Concluding message

Women with diastasis recti abdominis did not have weaker PFM or more pelvic floor dysfunction than women without diastasis.

References

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