

DOES PELVIC FLOOR MUSCLE TRAINING DURING PREGNANCY NEGATIVELY AFFECT LABOUR AND BIRTH?

Hypothesis / aims of study

Randomized controlled trials have shown that pelvic floor muscle training (PFMT) during pregnancy can prevent and treat urinary incontinence both during pregnancy and in the immediate postpartum period. However, many women are told that antenatal PFMT may make their PFM less elastic resulting in obstructed/prolonged labour and instrumental deliveries, and are recommended not to train the PFM during pregnancy. The aim of the present study was to evaluate whether women partaking in PFMT during pregnancy have increased risk of 3rd and 4th degree perineal rupture, ineffective uterine contractions and caesarean section.

Study design, materials and methods

This study is a subproject in the Norwegian Mother and Child Cohort Study (MoBa). MoBa is a pregnancy cohort where pregnant women are recruited to the study through a postal invitation after they have signed up for the routine ultrasound examination at gestational week 18-20 in their local hospital. Participating women receive three questionnaires during pregnancy. In week 17 a questionnaire regarding general health issues (Q1) is filled out by the mother. In week 20, a food frequency questionnaire is received, and in week 30, another questionnaire (Q3) on general health is sent out. Additional questionnaires are administered when the child is 6 months (Q4), 18 months (Q5), and 3 years old (Q6). The questionnaires cover a variety of issues with detailed questions on nutrition, health, pregnancy-related topics, socioeconomic status, and environmental, familial and psychological factors before, during and after pregnancy. The women were asked about frequency to which they were exercising the PFM. PFMT was defined as "training of the muscles surrounding the urethra, vagina and rectum". We classified PFMT as: < once a week, 1-2 times a week and ≥ 3 times a week at both week 17 and 30. Women were classified as starters if they only reported to exercise at week 30, "quitters" if they only had exercised at week 17 and "unregulars" if they had changed training frequency between the two response points. The study is linked to the Norwegian Medical Birth Registry and data of perineal rupture 3rd and 4th degree, ineffective uterine contractions and caesarean section (elective and acute) are based on that registry. The study has been approved by the Regional committee for ethics in medical research and the Data Inspectorate. The present analyses include 28.936 women who gave birth to a singleton fetus enrolled between 2000 and 2005 and that answered to Q1, Q3 and Q4. We used logistic regression analyses to estimate the associations between PFMT and the outcomes adjusted for confounding factors. The results are presented in adjusted odds ratios (aOR) with 95 % confidence intervals (95% CI). The results were adjusted for parity, maternal age, pre-pregnancy BMI, weight gain/loss during pregnancy, cohabitant status, smoking in gestational week 13-17, general physical activity during pregnancy, pelvic girdle pain and urinary leakage.

Results

Mean age of the study group was 29.5 years (range 14-47) and mean pre-pregnancy BMI was 24.2 (SD 4.3). Mean parity was 1.6 (SD 0.5). Forty-five percent were 1st time pregnant. Thirty-three % reported to do PFMT < once a week, 5.2% 1-2 times a week and 10.5% ≥ 3 times a week both in week 17 and in week 30. For women training the PFM 1-2 times per week aOR for 3rd and 4th degree perineal rupture, ineffective uterine contractions and caesarean section were 0.91 (95% CI: 0.68- 1.22), 0.87 (95% CI: 0.76-0.99) and 0.80 (95% CI: 0.67-0.96), respectively. For women reporting to train the PFM ≥ 3 times a week, the corresponding aOR were 0.81 (95% CI: 0.64-1.04), 0.90 (95% CI: 0.81-0.99) and 0.78 (95% CI: 0.68-0.90).

Interpretation of results

This prospective cohort study showed that PFMT during pregnancy decreased the risk of 3rd and 4th degree perineal rupture, ineffective uterine contractions and caesarean section. Higher frequency of PFMT did not affect the results of the present study. Hence the difference in risk was between not exercising and exercising. Strengths of the present study are the number of participants and the link with the Medical Birth Registry for registration of clinical outcome variables. Limiting factors are the lack of clinical data on ability to contract the PFM and no data on PFM strength. However, the results support the results of one RCT showing that antenatal PFMT was associated with fewer deliveries with prolonged second stage (> 60 minutes) and less episiotomy (1) and another RCT showing no difference in duration of second stage of labour, active pushing or need for instrumental delivery between those who had trained and not trained the PFM (2).

Concluding message

PFMT during pregnancy does not seem to negatively affect uterine contractions, prevalence of perineal rupture or the rate of caesarean section. Hence, health professionals should not discourage pregnant women from training the PFM. More clinical studies are needed to understand the mechanism of how a well trained pelvic floor may affect labour and birth outcome.

References

1. BMJ (2004) 329; 378-380
2. Neurourol Urodyn (2005) 24,5/6; 510-511

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HUMAN SUBJECTS: This study was approved by the Regional Medical Ethics Committee and followed the Declaration of Helsinki. Informed consent was obtained from the patients.