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DOES A REGULAR EXERCISE PROGRAM INCLUDING PELVIC FLOOR MUSCLE TRAINING DURING PREGNANCY PREVENT INCONTINENCE THREE MONTHS POSTPARTUM? A SECONDARY ANALYSIS OF A RANDOMIZED CONTROLLED TRIAL.

Hypothesis / aims of study
Pregnancy and delivery are risk factors for urinary and anal incontinence in later life. The aim of the present study is to assess whether an exercise program including pelvic floor muscle training (PFMT) can prevent incontinence up to three months postpartum. This is a planned secondary analysis of a randomized controlled trial.

Study design, materials and methods
We conducted a two-armed, two-center randomized controlled trial of a 12-week regular exercise program versus standard antenatal care. Pregnant women booking for routine ultrasound at the two hospitals were invited to participate in the trial, and women were recruited from April 2007 to June 2009.
Inclusion criteria were age ≥ 18 years and a singleton live fetus. Exclusion criteria were high-risk pregnancies and/or diseases that could interfere with participation. For practical reasons we also excluded women who lived too far from the hospitals to attend weekly training groups (more than 30 minutes drive).
Women in the intervention group received a standardized exercise program consisting of aerobic activity and strength training, including specific PFMT. The training protocol followed recommendations from The American College of Obstetricians and Gynecologists and the Norwegian National Report on Physical Activity and Health (1,2). Training sessions of 60 minutes in groups of 8-15 women instructed by a physiotherapist were offered once a week over a period of 12 weeks (between 20 and 36 pregnancy weeks). In addition, women were encouraged to follow a written 45 minutes home exercise program including PFMT at least twice a week (30 minutes endurance training and 15 minutes strength exercises). The PFMT followed principles for increasing strength of skeletal muscles. Women were encouraged to perform three sets of eight to twelve close to maximums contractions and were encouraged to hold the contraction in six to eight seconds and if possible to add three fast contractions at the end of the contraction.

Women in the intervention group were individually instructed in pelvic floor anatomy and how to contract the pelvic floor muscles correctly by a physical therapist at inclusion. Correct contraction was controlled by vaginal palpation. At follow-up, 32-36 weeks of pregnancy and three months postpartum, both intervention group women and control group were women controlled by vaginal palpation.

Women in the control group received standard antenatal care and the customary information given by their midwife or general practitioner. They were not discouraged from exercising on their own. Women in both groups received written information and recommendations on PFMT. The PFMT brochure includes detailed information about the pelvic floor and an evidence-based PFMT program.

Main outcomes were urinary and anal incontinence measured by self-reports.

Results
In all, 855 women were included in the trial, and data from 722 women were available at three months postpartum. There were no differences in labor outcomes between the intervention and control group. At three months postpartum there were no difference between intervention group women and control group women reporting doing PFMT ≥3 days per week. However, fewer women in the intervention group reported urinary incontinence (29% vs 38%, $p<0.01$). Urinary incontinence was reported by 31.4% of nullipara women and 35.5% of multipara women ($p=0.259$). Less intervention group women reported fecal incontinence, although not reaching statistical significant (3.8% vs 6.3%, $p=0.125$).

Interpretation of results
The results in the present trial documents that pregnant women should be advised to do PFMT to prevent and treat UI. Thorough instruction in correct PFM contraction and PFMT is important, and specific PFM exercises should be included in exercise classes for pregnant women. The preventive effect of PFMT on anal incontinence should be further explored in future trials.

Concluding message
This trial demonstrates that a 12-week regular exercise course including PFMT in second half of pregnancy prevents urinary incontinence up to three months postpartum.

References
1. ACOG. Exercise during pregnancy and the postpartum period. Clin Obstet Gynecol 2003;46:496-9.
2. SEF. Extract from the Norwegian National Report on Physical Activity and Health. Scand J Med Sci Sports 2001;11:255-7

Disclosures
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