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ASSESSMENT OF RISK FACTORS OF URINARY INCONTINENCE IN PREGNANCY, EFFECT OF PELVIC FLOOR MUSCLE TRAINING

Hypothesis / aims of study

There is a very high prevalence of urological symptoms during pregnancy as compared to those before pregnancy. If women have lower urinary tract symptoms prior to pregnancy, they are more likely to persist after delivery. Summarizing data of the epidemiological researches received for the last 10 years, it is possible to make a conclusion on the leading role of pregnancy and childbirth in development of different types of urinary incontinence (UI) in women. Statistically significant risk factors are age of woman, quantity and quality of the previous childbirth, weight of the newborn and body mass index (BMI). During and after pregnancy, women are advised to perform pelvic floor muscle training (PFMT) to prevent the development of UI.

Objectives: to estimate reliable risk factors of development of UI during pregnancy.

Study design, materials and methods

518 participants underwent an interview in pregnancy (20 and 36 weeks) and at four months after their delivery to determine the presence and type of UI. 70 high risk group patients of UI development were recommended PFMT during pregnancy. Mean age of subjects was 30,6 ± 5,7 years. Exclusion criteria were as follows: diabetes; arterial hypertension; bacteriuria, diseases of kidneys; BMI > 40 kg/m^2; craniocereberal and vertebral traumas, tumors of genitals. Statistical analyses were made by means of a package «Analysis Tools Pack», «Statistica» v 7.0.

Results

12 (2,3%) out of 518 patients had stress incontinence, 280 (54%) had symptoms of overactive bladder syndrome (urge incontinence 9,7%), 109 (21%) had mixed incontinence. All types of UI were found to be increased in patients of 40-44 years old (RR 1,41; 95 % CI -1,36 to 4,54; p < 0,05).

In group of women, having UI before the present pregnancy all UI types rate was higher (RR 1,74; 95% CI - 1,12 to 1,94; p < 0,001).

Mean weight of pregnant women with UI was 71,9 ± 11,8 kg. Mean BMI was 26,0 ± 3,9 kg/m^2. BMI was higher in group of women with stress and mixed UI, than in the controls group (p < 0,02). A relative risk of occurrence stress and mixed UI was higher in group of women with BMI > 25 kg/m^2 (RR 1,15; 95 % CI - 1,05 to 1,30; p < 0,05).

251 (48,5%) pregnant women had from one up to seven pregnancies in the anamnesis (mean 1,9 ± 1,3). Assessment of a relative risk of UI development in 251 (48,5%) pregnant women demonstrated (RR 1,27; 95% CI - 1,16 to 1,56; p < 0,002).

A relative risk of occurrence stress and mixed UI was higher in group of pregnant women having childbirth (R 2,05; 95 % CI - 1,15 to 3,65; p < 0,05; and RR 1,52; 95 % CI - 1,03 to 2,23; p < 0,02, respectively).

Mean weight of the newborn was 3346,3 ± 530,2 g. Mean weight of the newborn in group of patients with mixed UI was more, comparing with the control group: 3544 ± 519 g and 3173 ± 740 g, respectively (p < 0,01). A relative risk of occurrence mixed UI in group of women with weight of the newborn above 3544 ± 519g was higher (RR = 1,38; 95% CI - 1,02 to 1,85; p < 0,05).

PFMT is effective in group of the women, having mixed UI (69%) and symptoms of overactive bladder syndrome (61,8%).

Concluding message

Women in pregnancy can experience lower urinary tract symptoms which are related to the pregnancy and delivery. The most significant risk factors of UI during pregnancy are age of patients of 40 - 44 years, pregnancies and UI in the anamnesis. Significant risk factor of stress and mixed UI is childbirth, increase BMI > 25 kg/m^2, at mixed UI - increase of weight of the newborn in the previous childbirth. Pelvic floor muscle training is commonly recommended during pregnancy and after birth both for prevention and treatment of incontinence in a group with high risk of incontinence.

References

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Is this a clinical trial?	**Yes**
Is this study registered in a public clinical trials registry?	**No**
Is this a Randomised Controlled Trial (RCT)?	**Yes**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**Ethics Committee of Research Center for Obstetrics, Gynecology and Perinatology, Moscow, Russia**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**