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CHARACTERISTICS OF REPRODUCTIVE POTENTIAL IN WOMEN WITH A DISORDER OF MENSTRUAL FUNCTION REGULARIZATION IN ANAMNESIS TAKING INTO ACCOUNT BODY MASS INDEX

The aim of the study – to assess the reproductive potential and peculiarities of the pregnancy and childbirth in women with a variation of body mass index and a disorder of menstrual function regularization.

Materials and Methods. An examination of 110 women with a disorder of menstrual function regularization in anamnesis (the main study group), starting from the preconception preparation stage, using clinical, laboratory, microbiological, sonographic (ultrasound and doplerometric), hormonal and statistical research methods have been carried out. Three groups have been formed: comparison group, which included 24 patients with normal mass-and-height index (BMI = 18.5–24.9), the first study group – 41 women with excess body weight and the second study group – 45 patients with deficit of body weight (BMI <18.5 kg / м^2). The control group included 20 practically healthy women.

Results and Discussion. In most women with a deficit of body weight, a delayed puberty, sexual infantilism, a disorder of menstrual function regularization by type of algodismenorrhea and dysfunctional uterine bleeding have been diagnosed, while women with overweight suffered from polycystic ovary syndrome or menstrual disturbances by type of oligoopsomenorrhea with episodes of secondary amenorrhea. The assessment of a “family portrait” and analysis of abstract of outpatient medical records of a child’s development made it possible to mark the preterm births in 12.72 % of cases, and newborns with low birth weight – in 35.45 % of observations. Also, the heterogeneity in physical development of women of the main group was found: macrosomatic harmonious development (28.18 %), disharmonious development (14.54 %), microsomatic harmonious development (23.63 %), mesosomatic harmonious development (33.63 %). In the group of patients with overweight, primiparas who were pregnant again, accounted for two-thirds of all examined patients. Pelvic surgeries, medical abortions and instrumental interventions were noted in 29.26 % of cases, premature spontaneous miscarriages – in 8.76 %, preterm labor – in 21. 95 %, primary infertility – in 12.19 %. A more pronounced decline in reproductive capacity was commonly found in women of the second group with a deficit of body weight. Primary or secondary infertility was diagnosed in 35.55 % of patients; pregnancy in women of the second group occurred during the first year of regular sexual life (17.77 %), during the second year – in 24.44 %, 28.88 % of women became pregnant after hormonal correction or after applying the assisted reproductive technologies.

Conclusions. The analysis of reproductive potential demonstrated a high percentage of primary infertility, hormonal induction of ovulation, the use of assisted reproductive technologies, and a large number of obstetric complications and pathological childbirths without a significant difference in the groups. However, differences in the structure of gestational and delivery complications with predominance of habitual noncarrying of pregnancy and surgical delivery in women with a deficit of body mass and increasing preeclampsia, placental dysfunction and postpartum complications in patients with overweight should be noted.

Key words: disorder of menstrual function regularization; deficit of body weight; obesity; reproductive potential; pregnancy course.

ОСОБЛИВОСТІ РЕПРОДУКТИВНОГО ПОТЕНЦІАЛУ В ЖІНОК ІЗ ПОРУШЕННЯМ СТАНОВЛЕННЯ МЕНСТРУАЛЬНОЇ ФУНКЦІЇ В АНАМНЕЗІ ІЗ ВРАХУВАННЯМ ІНДЕКСУ МАСИ ТІЛА

Мета дослідження – оцінити репродуктивний потенціал та особливості перебігу вагітності і пологів у жінок із відхиленням індексу маси тіла та порушенням становлення менструальної функції.

Матеріали та методи. Проведено обстеження і динамічне спостереження за станом 110 жінок із порушенням становлення менструальної функції в анамнезі (основна група), розпочинаючи з етапу прегравідарної підготовки, із використанням загальноклінічних, лабораторних, мікробіологічних, ехографічних (ультразвукових та доплерометричних), гормональних і статистичних методів дослідження. Сформовано три групи: групу порівняння, куди ввійшли 24 пацієнтки із нормальним ваго-ростовим індексом (ІМТ=18,5–24,9), першу досліджувану групу – 41 жінка із надмірною вагою тіла та другу досліджувану групу – 45 осіб із дефіцитом маси тіла (ІМТ <18,5 кг/м^2). У контрольну групу включили 20 практично здорових пацієнток.

Результати дослідження та їх обговорення. У жінок із дефіцитом маси тіла виявлено у більшій частці затримку статевого розвитку, статевий інфантилізм, порушення становлення менструальної функції за типом альгодисменореї та дисфункціональних маткових кровотеч, тоді як у жінок із надмірною масою тіла діагностовано синдром полікістозних яєчників, або порушення менструальної функції за типом олігоопсоменореї з епізодами вторинної аменореї. Оцінка «сімейного портрета» та аналіз виписок із амбулаторних карт розвитку дитини дозволили відмітити народження недоношеними у 12,72 % випадках, маловаговими – у 35,45 % спостережень. Також була встановлена різнорідність у фізичному розвитку жінок основної групи: макросоматичний гармонійний розвиток відмічено у 28,18 %, дисгармонійний – у 14,54 %, мікросоматичний гармонійний розвиток – 23,63 %, мезосоматичний гармонійний – 33,63 %. У групі пацієнток із надмірною вагою повторновагітні першонароджуючі становили дві третини від усіх обстежених пацієнток, операції на органах малого таза, медичні аборти та інструментальні втручання відмітили у 29,26 %, ранні самовільні викидні – у 8,76 %, передчасні пологи та невиношування – у 21,95 %, первинне безпліддя – 12,19 %. Для жінок другої групи із дефіцитом маси тіла було характерним більш виражене зниження репродуктивного потенціалу. Безпліддя первинне чи вторинне діагностовано у 35,55 % спостережень, вагітність у жінок другої групи настала протягом першого року регулярного статевого життя у 17,77 %, на другому році – у 24,44 %, у 28,88 % – після гормональної корекції або внаслідок використання допоміжних репродуктивних технологій.

Висновки. Аналіз репродуктивного потенціалу продемонстрував значимий відсоток первинного безпліддя, гормональної індукції овуляції, використання допоміжних репродуктивних технологій та значиму частку акушерських ускладнень і патологічного перебігу пологів без значимої достовірної різниці по групах. Проте слід відмітити відмінності у структурі гестаційних та пологових ускладнень із переважанням невиношування й оперативного розродження в жінок із дефіцитом маси тіла та зростання частки прееклампсії, плацентарної дисфункції і післяродових ускладнень у пацієнток із надмірною вагою.

Ключові слова: порушення становлення менструальної функції; дефіцит маси тіла; ожиріння; репродуктивний потенціал; перебіг вагітності.

ОСОБЕННОСТИ РЕПРОДУКТИВНОГО ПОТЕНЦИАЛА У ЖЕНЩИН С НАРУШЕНИЕМ СТАНОВЛЕНИЯ МЕНСТРУАЛЬНОЙ ФУНКЦИИ В АНАМНЕЗЕ С УЧЕТОМ ИНДЕКСА МАССЫ ТЕЛА

Цель исследования – оценить репродуктивный потенциал и особенности течения беременности и родов у женщин с отклонением индекса массы тела и нарушением становления менструальной функции.

Материалы и методы. Проведено обследование и динамическое наблюдение за состоянием 110 женщин с нарушением становления менструальной функции в анамнезе (основная группа), начиная с этапа преградидарной подготовки, с использованием общеклинических, лабораторных, микробиологических, эхографических (ультразвуковых и допплерометрических), гормональных и статистических методов исследования. Сформированы три группы: группа сравнения, куда вошли 24 пациентки с нормальным весо-ростовым индексом (ИМТ = 18,5–24,9 кг/м^2), первая исследуемая группа – 41 женщина с чрезмерной массой тела и вторая исследуемая группа – 45 человек с дефицитом массы тела (ИМТ <18,5 кг/м^2). В контрольную группу включили 20 практически здоровых пациенток.

Результаты исследования и их обсуждение. У женщин с дефицитом массы тела обнаружено задержку полового развития, половой инфантилизм, нарушения становления менструальной функции по типу альгодисменореи и дисфункциональных маточных кровотечений, тогда как у женщин с избыточной массой тела диагностирован синдром поликистозных яичников, или нарушение менструальной функции по типу олигоопсоменореи с эпизодами вторичной аменореи. Оценка «семейного портрета» и анализ выписок из амбулаторных карт развития ребенка позволили отметить рождения недоношенными в 12,72 % случаев, маловесных – в 35,45 % наблюдений. Также была установлена разнородность в физическом развитии женщин основной группы: макросоматическое гармоничное развитие отмечено в 28,18 %, дисгармоничное – в 14,54 %, микросоматическое гармоничное развитие – 23,63 %, мезосоматическое гармоничное – 33,63 %. В группе пациенток с избыточным весом повторнобеременные первородящие составляли две трети от всех обследованных пациенток, операции на органах малого таза, медицинские аборты и инструментальные вмешательства отметили в 29,26 %, ранние самопроизвольные выкидыши – в 8,76 %, преждевременные роды и невынашивание – у 21,95 %, первичное бесплодие – 12,19 %. Для женщин второй группы с дефицитом массы тела было характерно более выраженное снижение репродуктивного потенциала. Бесплодие первичное или вторичное диагностировано у 35,55 % наблюдений, беременность у женщин второй группы наступила в течение первого года регулярной половой жизни в 17,77 %, на втором году – в 24,44 %, в 28,88 % – после гормональной коррекции или в результате использования вспомогательных репродуктивных технологий.

Выводы. Анализ репродуктивного потенциала продемонстрировал значительный процент первичного бесплодия, гормональной индукции овуляции, использование вспомогательных репродуктивных технологий и значимую долю акушерских осложнений и патологического течения родов без значимой достоверной разницы по группам. Однако следует отметить различия в структуре гестационных и родовых осложнений с преобладанием невынашивания и оперативного родоразрешения у женщин с дефицитом массы тела и рост доли преэклампсии, плацентарной дисфункции и послеродовых осложнений у пациенток с избыточным весом.

Ключевые слова: нарушение становления менструальной функции; дефицит массы тела; ожирение; репродуктивный потенциал; течение беременности.

INTRODUCTION. The literary sources show great attention of scientists to the assessment of the influence of the pathological course of puberty and the body mass variation on the regularization and function of the female reproductive system [1, 3, 4]. Some authors indicate that the parameters of physical development are an individual clinical and diagnostic criterion in the context of social and hygienic studies that determine the characteristics of the health index and are an indicator of social well-being [1, 4, 6, 7]. The critical, not always objective attitude to one's own appearance, popularization of the modeling business and the influence of the mass media, inadequate assessment of the own body weight and various methods of its improvement, cosmetic dietary regimen mania in modern young generation endanger the formation of deficit of body weight, and sometimes – anorexia [1 , 4, 6, 7].

Nowadays, there is not enough scientific data on the correlation between the development of reproductive health disorders and the abnormalities of the body mass variation, i. e. deficit or overweight [1, 4, 6, 7]. Although at the present time, the multifactor data on the final result in the formation of a teenage girl's health status are also practically assured. Information on the influence of body mass variation is contradictory, which suggests the peculiarities of the reproductive system formation and their influence on the course of pregnancy and childbirth in future. At the same time, the combined effect of body mass deficit, along with the ovarian-menstrual cycle disorders and other factors on reproductive behaviour, the processes of morphofunctional formation of the reproductive system, obstetric and gynaecological problems remain discursive, not completely understood and studied [1, 5]. Similar studies in available literary sources are singular [1, 2, 4, 5].

Unfortunately, the traditional approach to puberty period analysis does not involve an individualized pathogenetically grounded prophylactic examination of adolescents, taking into account the maternity-to-be, necessary for the preservation of reproductive health in modern conditions [2, 5]. There-

fore, it is reasonable to study profoundly the peculiarities of the reproductive health formation in teenage girls and young women with a disorder of menstrual function regularization and variation of the body mass index, which determines the relevance of this research.

THE AIM OF THE STUDY – to assess the reproductive potential and peculiarities of the pregnancy and childbirth in women with a variation of body mass index and a disorder of menstrual function regularization.

MATERIALS AND METHODS. In our researches, we tried to provide an integrated approach to the examination and dynamic monitoring of the condition of 110 women with a disorder of menstrual function regularization in anamnesis (the main group), starting with the stage of preconception preparation, using clinical, laboratory, microbiological, sonographic (ultrasound and doplerometric), hormonal and statistical research methods. Three groups have been formed: comparison group, which included 24 patients with normal mass-and-height index (BMI = 18.5–24.9), the first study group – 41 women with excess body weight and the second study group – 45 patients with deficit of body weight (BMI <18.5 kg / м^2). The control group included 20 practically healthy women.

The degree of presentation, based on the results of body mass index (BMI) after Brey: BMI = weight (kg) / height^2 (cm^2) was assessed while investigating. Practically, all of the women of the main group had typically female phenotypes. The results of clinical and laboratory testing at the pre-gestational stage and during the first half of pregnancy, the data on dynamic clinical and laboratory monitoring, complication cases were individually recorded in follow-up card. The data of these cards were included to the personal computer database and processed using the Excel program in the Microsoft Office XP program.

RESULTS AND DISCUSSION. In this scientific study, an assessment of reproductive development, pregnancy, labor and postpartum period in women with a disorder of menstrual function regularization and variations of body mass indexes from the reference has been made. The results of the study and the assessment of the peculiarities of anamnesis in the main group of patients demonstrated the clinical signs of a delayed puberty, sexual infantilism, a long-lasting disorder of menstrual function by type of oligoopsiomenorrhea, dysfunctional uterine bleeding and luteal phase failure, primary infertility, a high proportion of gestational complications, complicated births and postpartum period, indicating the need to optimize the preconception preparation and pregnancy follow-up in this category of patients, especially if the body weight indexes are not within normal limits. It should be noted that in most women with a deficit of body weight, a delayed puberty, sexual infantilism, a disorder of menstrual function regularization by type of algodismenorrhea and dysfunctional uterine bleeding have been diagnosed, while women with overweight suffered from polycystic ovary syndrome or menstrual disturbances by type of oligoopsomenorrhea with episodes of secondary amenorrhea.

The results of the assessment of the body mass index showed the following. The weight-growth rate was within normal limits only in 24 (21.81 %) women with a disorder of menstrual function regularization in anamnesis (the comparison group); overweight was observed in 41 (37.27 %) patients (the first group under study). It should also be noted the dominance of women with a reduced body mass index – 45 cases (40.90 %) (the second study group). In the first group, the weight-growth rate was (36.8 ± 0.6) kg / m, with obesity of the 2-nd degree in 19 women (17.27 %); in the second group – (18.1 ± 0.6) kg / m, in the comparison group – (26.6 ± 0, 2) kg / m. Overweight as well as body weight deficit was observed in the control group in 10.00 % of cases, respectively.

In addition to general information, the data on genetic determinism, premorbid background, social living conditions, quality of surveillance during pre-puberty and puberty were statistically processed. We have noted a high percentage of abnormal pregnancies in mothers of women included in the study. The peculiarities of gestation period of these patients were characterized by preeclampsia, abnormal labor and premature delivery. The assessment of a “family portrait” and analysis of abstract of outpatient medical records of a child’s development made it possible to mark the preterm births in 12.72 % of cases, and newborns with low birth weight (< 3000 g) – in 35.45 % of observations. Also, the heterogeneity in physical development of women of the main group was found: macrosomatic harmonious development (28.18 %), disharmonious development (14.54 %), microsomatic harmonious development (23.63 %), mesosomatic harmonious development (33.63 %).

The analysis of clinical and anamnestic data and the result of the assessment of reproductive health and physical development of patients under the study, already at the preconception stage, allowed marking a disorder of menstrual function regularization and a close correlation with a variation from normal body mass. Thus, in women with a body weight deficit, a delayed sexual development, constitutional form, late menarche (23.63 %), regularization of ovarian-menstrual cycle for 1.5 years (26.36 %) were diagnosed. In 28.18 % of the patients menstrual cycle remained irregular until the moment of this pregnancy.

In women of the first group with excess body weight the regularization of menstrual function was as follows: early menarche until 12 years (36.58 %), the regular menstrual cycle at the first onset (21.92 %), regularization up to a year (26.82 %), remained irregular with episodes of secondary amenorrhea up to 3 months or more (41.46 %). In the group of patients with overweight, there were some differences in the reproductive anamnesis, namely: primiparas who were pregnant again, accounted for two-thirds of all examined patients. Pelvic surgeries, medical abortions and instrumental interventions were noted in 29.26 % of cases, premature spontaneous miscarriages – in 8.76 %, preterm labor – in 21.95 %, primary infertility – in 12.19 %.

A more pronounced decline in reproductive capacity was commonly found in women of the second group with a deficit of body weight. Primary or secondary infertility was diagnosed in 35.55 % of patients; pregnancy in women of the second group occurred during the first year of regular sexual life (17.77 %), during the second year – in 24.44 %, 28.88 % of women became pregnant after hormonal correction or after applying the assisted reproductive technologies.

Preterm spontaneous miscarriages in anamnesis were noted in 17.77 % of cases, instrumental interventions and abortions – in 15.56 % of women, 8.88 % of patients had ectopic pregnancy. It should be noted that in patients of the second group, pregnancy occurred on the background of genital

infantilism, aggravated obstetric and gynecological anamnesis, chronic sources of infection (35.56 %), an anatomically narrow pelvis (17.77 %), and was accompanied by gestational anemia (57.77 %), placental dysfunction (37.77 %), fetal growth retardation syndrome (28.88 %), placenta hypoplasia (42.22 %), habitual noncarrying of pregnancy (35.56 %), and operative delivery (24.44 %).

Assessment of pregnancy in patients with excessive body weight allowed establishing the somatic diseases (29.26 %), vegetovascular dystonia by hypertensive type (21.95 %), and urinary system diseases (19.51 %). Gestation course was on the background of preeclampsia of various degrees of severity (21.92 %), placental dysfunction (41.46 %), fetal distress (26.82 %), and gestational anemia (36.58 %).

The course of birth in women with a body weight deficit made it possible to note the high percentage of premature births (24.44 %), traumatism during delivery (937.77 %), surgical interventions (in 24.44 %), which is twice as often as in women with excessive body weight. Besides, the indications for cesarean section were the abnormalities in labor, acute distress during childbirth and premature detachment of a normally located placenta. While in patients with overweight the percentage of surgical interventions was somewhat lower, the number of the perineum and vagina ruptures was 3.0 times lower, however, the growth of postpartum complications such as hypotonic uterine bleeding (12.19 %), subinvolution of uterus (21.95 %), and endometritis (7.31 %) should be noted .

In the comparison group, pregnancy occurred in almost all women during the first year of regular sexual life. It was characterized by a low number of complications (threatened miscarriage (16.66 %), gestosis (12.50 %), gestational anemia (29.16 %), and compensated intrauterine fetal disturbances. Childbirth was terminated without surgical intervention, although 4 cases (16.66 %) of abnormalities in labor and their correction were noted.

CONCLUSIONS. Thus, a retrospective analysis of the reproductive development, pregnancy, childbirth and the postpartum period in patients with a disorder of the menstrual cycle regularization demonstrate the dependence on the normal body mass index, namely: in women with body weight deficit the following disorders were revealed: delayed puberty, sexual infantilism, a disorder of menstrual function regularization by type of algodismenorrhea and dysfunctional uterine bleeding, while women with overweight suffered from polycystic ovary syndrome or menstrual disturbances by type of oligoopsomenorrhea with episodes of secondary amenorrhea.

THE PROSPECTS OF FURTHER STUDIES. The analysis of reproductive potential demonstrated a high percentage of primary infertility, hormonal induction of ovulation, the use of assisted reproductive technologies, and a large number of obstetric complications and pathological childbirths without a significant difference in the groups. However, differences in the structure of gestational and delivery complications with predominance of habitual noncarrying of pregnancy and surgical delivery in women with a deficit of body mass and increasing preeclampsia, placental dysfunction and postpartum complications in patients with overweight should be noted. Reduced reproductive potential and a high percentage of pregnancy and childbirth complications indicate the need for special attention to young women with variations of the body mass index and a disorder of menstrual function regularization in anamnesis on the part of the obstetrician-gynecologists, endocrinologists and family doctors for the prevention of perinatal complications, which is a perspective for further research.

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