

Medical aspects of the pregnant women with cervical insufficiency and infertility in anamnesis

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The formation of the puberty period is an important background for the female reproductive system in the future and the realization of the childbirth.

The objective: to assess medical aspects in women with cervical insufficiency (CI) and infertility associated with anovulation in history.

Materials and methods. 60 pregnant women with CI and anovulatory infertility in anamnesis formed the basic group. In these persons the pregnancy occurred after the use of additional reproductive technologies. The control group formed 30 pregnant women without CI and infertility and with physiological pregnancy.

Results. In 33.33% individuals in the basic group menarche started in 16 years old and more. While in the control group in all women menarche started in 11–15 years old ($\chi^2=11.00$; $p<0.001$). In the reproductive age all controls (100.00%) had regular menstrual cycle that was in 3.33 times more than the women in the basic group (30.00%; $\chi^2=36.61$; $p<0.001$), 70.00% persons in the basic group had irregular menstruations.

The menstruations were always irregular from menarche in 16.64% persons with CI vs none cases among healthy women ($\chi^2=4.06$; $p=0.04$). Endometriosis was diagnosed in 48.33% individuals with CI and infertility, polycystic ovary syndrome – 38.33%, diminished ovarian reserve – 26.67%, hyperandrogenism – 41.67%, ovary cyst – 20.00%. The rate of the infections of the low genital tract before pregnancy was higher in women in the basic group, also 45.00% of these women had gynecological operations ($\chi^2=19.43$; $p<0.001$); thyroid diseases – 25.00% ($\chi^2=5.03$; $p=0.02$), overweight and obesity – 26.67%.

Conclusion. Thus, the results of our study indicate that in the persons with cervical infertility and anovulatory infertility in anamnesis disorders in the reproductive system mostly start from the puberty period; the high rate of gynecological diseases, operations on the pelvic organs, pregnancy loss are typical for them.

Key words: infertility, cervical insufficiency, factors.

Медичні аспекти у вагітних з істміко-цервікальною недостатністю та безплідністю в анамнезі

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Період становлення репродуктивної функції є важливим фоном для жіночої репродуктивної системи у майбутньому і реалізації дітонародження.

Мета дослідження: оцінювання медичних факторів у жінок з істміко-цервікальною недостатністю (ІЦН) і безплідністю, пов'язаною з ановуляцією, в анамнезі.

Матеріали та методи. В основну групу увійшли 60 вагітних з ІЦН і ановуляторною безплідністю в анамнезі. У них вагітність настала після використання допоміжних репродуктивних технологій. До контрольної групи увійшли 30 жінок без ІЦН, безплідності і з фізіологічною вагітністю.

Результати. У 33,33% пацієнток в основній групі менархе почалося у 16 років і старше, тоді як у контрольній групі у всіх обстежених менархе починалося в 11–15 років ($\chi^2=11,00$; $p<0,001$). У репродуктивному віці у всіх жінок контрольної групи (100,00%) менструальний цикл був регулярний, що у 3,33 разу більше, ніж в основній групі (30,00%; $\chi^2=36,61$; $p<0,001$). У 70,00% вагітних в основній групі менструації були нерегулярними.

З періоду менархе менструації завжди були нерегулярними у 16,64% вагітних з ІЦН порівняно з відсутністю таких випадків у здорових жінок ($\chi^2=4,06$; $p=0,04$). Ендометріоз діагностовано у 48,33% пацієнток із ІЦН і безплідністю, синдром полікістозних яєчників – у 38,33%, зниження оваріального резерву – у 26,67%, гіперандрогенію – у 41,67%, кісти яєчників – у 20,00%. Частота інфекцій нижніх відділів статевих шляхів до вагітності була вище у жінок основної групи, також 45,00% цих жінок перенесли гінекологічні операції ($\chi^2=19,43$; $p<0,001$). Захворювання щитоподібної залози діагностували у 25,00% пацієнток основної групи ($\chi^2=5,03$; $p=0,02$), надмірну масу тіла і ожиріння – у 26,67%.

Заключення. Результати даного дослідження демонструють, що у жінок із істміко-цервікальною недостатністю і ановуляторною безплідністю в анамнезі порушення репродуктивної системи починаються з періоду статевого дозрівання. Для них характерні високий рівень гінекологічних захворювань, операцій на органах малого таза, втрата вагітності.

Ключові слова: безплідність, істміко-цервікальна недостатність, фактори.

Медицинские аспекты у беременных с истмико-цервикальной недостаточностью и бесплодием в анамнезе

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Период становления репродуктивной функции является важным фоном для женской репродуктивной системы в будущем и реализации функции деторождения.

Цель исследования: оценка медицинских факторов у женщин с истмико-цервикальной недостаточностью (ИЦН) и бесплодием, связанным с ановуляцией, в анамнезе.

Материалы и методы. В основную группу вошли 60 беременных с ИЦН и ановуляторным бесплодием в анамнезе. У них беременность наступила после использования вспомогательных репродуктивных технологий. В контрольную группу вошли 30 женщин без ИЦН, бесплодия и с физиологической беременностью.

Результаты. У 33,33% пациенток в основной группе менархе началось в 16 лет и старше, тогда как в контрольной группе у всех обследованных менархе начиналось в 11–15 лет ($\chi^2=11,00$; $p<0,001$). В репродуктивном возрасте у всех женщин контрольной группы (100,00%) менструальный цикл был регулярный, что в 3,33 раза больше, чем в основной группе (30,00%; $\chi^2=36,61$; $p<0,001$). У 70,00% беременных в основной группе менструации были нерегулярными.

С периода менархе менструации всегда были нерегулярными у 16,64% беременных с ИЦН по сравнению с отсутствием таких случаев у здоровых женщин ($\chi^2=4,06$; $p=0,04$). Эндометриоз диагностирован у 48,33% пациенток с ИЦН и бесплодием, синдром поликистозных

яичников – у 38,33%, снижение овариального резерва – у 26,67%, гиперандрогения – у 41,67%, кисты яичников – у 20,00%. Частота инфекций нижних отделов половых путей до беременности была выше у женщин основной группы, также 45,00% этих пациенток перенесли гинекологические операции ($\chi^2=19,43$; $p<0,001$). Заболевания щитовидной железы диагностировали у 25,00% пациенток основной группы ($\chi^2=5,03$; $p=0,02$), избыточную массу тела и ожирение – у 26,67%.

Заключение. Таким образом, результаты данного исследования демонстрируют, что у женщин с истмико-цервикальной недостаточностью и ановуляторным бесплодием в анамнезе нарушения репродуктивной системы начинаются с периода полового созревания. Для них характерны высокий уровень гинекологических заболеваний, операции на органах малого таза, потеря беременности.

Ключевые слова: бесплодие, истмико-цервикальная недостаточность, факторы.

Nowadays the rate of infertility is still relatively high. More than 15% of families are infertile [1]. Many factors can lead to this pathology. The increase of the frequency of extragenital diseases, gynecological illnesses, social factors (stress, environmental harmful reasons, changes of the female position in the society, etc.), genetic aspects are the main features of the modern culture [4, 5, 6]. Besides this, the pregnancy in women with the history of infertility is usually associated with different complications – pregnancy loss, cervical insufficiency (CI), premature labor, negative perinatal outcomes and others [3, 7].

The objective: to assess the medical aspects in women with cervical insufficiency and infertility associated with anovulation in history.

MATERIALS AND METHODS

60 pregnant women with CI and infertility in anamnesis formed the basic group. In these women the pregnancy occurred after the treatment of anovulatory infertility with the use of additional reproductive technologies. The control group formed 30 pregnant women without CI and infertility and with physiological pregnancy. Inclusion criteria: single pregnancy, pregnancy after treatment of anovulatory infertility, cervical insufficiency, patient's written consent. Exclusion criteria: multiple pregnancy, antiphospholipid syndrome, thrombophilia, ovarian hyperstimulation syndrome, cytogenetic causes of miscarriage after in vitro fertilization, male infertility, tubal, cervical, immunological, unspecified infertility, connective tissue dysplasia, increased risk of chromosomal fetal abnormalities by results of I and/or II genetic screening.

We analyzed the medical histories and studied the pregestational aspects of life. The study was based in City Clinical Perinatal Centre and Regional Perinatal Centre (Ivano-Frankivsk). Diagnosis of infertility was based on the recommendations of the World Health Organization – the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse [8]. Diagnostic criteria of CI include the cervical length of 25 mm and less and V-shaped transformation of the cervical canal on 40% and more which were determined by transvaginal ultrasound examination [2].

Programs Statistica 6.0 was used to assess the results. We estimated the parameters of descriptive statistics, criterion ²(Yates corrected Chi-square), Mann-Whitney test.

RESULTS

The average age of the persons was more in the basic group ($31,73\pm 0,66$ years) than in the control one ($27,30\pm 0,92$ years; $p<0,001$). However, there were no statistical differences by age periods in both groups. Thus, 50 (83.33%) women with a history of CI and infertility were 20-34 years old, 10 (16.67%) were 35 years and older. Among healthy subjects, these data were respectively 26 (86.67%) and 3 (10.00%) persons and 1 (3.33%) woman was under 19 years old.

Almost the all women in both groups had official marriage partner 58 (96.67%) individuals in the basic groups and 25 (83.33%) – in the control one). Non-official marriage partner had 2 (3.33%) and 5 (16.67%) persons respectively. There was no difference in the level of education between the two groups. High education had 48 (80.00%) women with CI and infertility and

23 (76.67%) healthy individuals, 8 (13.33%) and 6 (20.00%) persons respectively graduated the college, 4 (6.67%) and 1 (3.33%) – the school.

Only in 40 (66.67%) subjects in the basic group menarche started in 11–15 years old, in 20 (33.33%) – in 16 years old and more. While in the control group in all individuals menarche started in 11–15 years old ($\chi^2=11,00$; $p<0,001$). The number of healthy persons (24 (80.00%)) in whom the menstruations were regular at once or during a year after menarche was in 2.53 times more than of women with CI and infertility in anamnesis (19 (31.67%) individuals; $\chi^2=16,84$; $p<0,001$). In the basic group the quantity of the women with regular menses during 1–3 years after menarche (31 (51.67%) persons) was in 2.58 times more than in the controls (6 (20.00%) subjects; $\chi^2=7,03$; $p=0,008$). In the reproductive age all controls (30 (100.00%)) had regular menstrual cycle that was in 3.33 times more than in the basic group (18 (30.00%); $\chi^2=36,61$; $p<0,001$), 42 (70.00%) persons in the basic group had irregular menstruations. Besides this, the menstruations were irregular always from the menarche in 10 (16.64%) patients with CI and infertility vs none cases in the healthy women ($\chi^2=4,06$; $p=0,04$).

The gynecological pathology was also typical for women in the basic group. 12 (20.00%) persons in the basic group and 6 (20.00%) controls had dysmenorrhea/algodysmenorrhea, premenstrual syndrome – 8 (13.33%) and 8 (26.67%) women respectively. Endometriosis was diagnosed in 29 (48.33%) persons with CI and infertility, polycystic ovary syndrome – 23 (38.33%), uterine myoma – 5 (8.33%), diminished ovarian reserve – 16 (26.67%), chronic adnexitis – 7 (16.67%), chronic endometritis – 6 (10.00%), hyperandrogenism (including cases with polycystic ovary syndrome) – 25 (41.67%), ovary cyst – 15 (20.00%). Only 2 (6.67%) healthy subjects had endometriosis, 3 (10.00%) – ovary cysts. Primary infertility was diagnosed in 44 (73.33%) individuals, secondary one – in 16 (26.67%).

The rate of the low genital tract infections before pregnancy was higher in women in the basic group. Thus, Ureaplasma urealyticum was determined in 6 (10.00%) persons, Chlamydia trachomatis – 4 (6.67%), Mycoplasma genitalis – 2 (3.33%), bacterial vaginosis – 11 (18.33%), frequent recurrence of vaginal candidosis – 7 (11.67%). Only 2 (6.67%) controls had frequent recurrence of vaginal candidosis, 1 (3.33%) – chlamydiosis and ureaplasmosis each. Cervical pathology (erosion, cervical intraepithelial neoplasia) was diagnosed in 4 (13.33%) healthy individuals and 7 (11.67%) with CI and infertility.

The high rate of gynecological operations on the pelvic organs was typical for women with infertility. 27 (45.00%) persons in the basic group had gynecological operations (in the control group – 1 (3.33%) person; $\chi^2=19,43$; $p<0,001$), 22 (36.67%) of them had one operation, 5 (8.33%) – two operations. The indications for the operations were: polycystic ovary syndrome – 11 (18.33%) subjects, ectopic pregnancy – 5 (8.33%), diagnostic laparoscopy/hysteroscopy – 5 (8.33%), uterine myoma (myomectomy) – 3 (10.00%), ovary cyst – 1 (1.67%), ovary apoplexy – 1 (1.67%). Besides this 2 (3.33%) persons in the basic group were performed with polypectomy (hysteroscopic procedure).

The spread of the extragenital pathology was more in individuals with CI and infertility. Before pregnancy renal diseases was determined in 7 (11.67%) patients in the basic groups and

1 (3.33%) control person, digestive pathology – 19 (31.67%) and 4 (13.33%) women respectively, thyroid diseases – 15 (25.00%) and 1 (3.33%; $\chi^2=5.03$, $p=0.02$), overweight and obesity – 16 (26.67%) and 3 (10.00%).

The persons in the basic group had the history of the interruption of the previous pregnancy. Thus, 9 (15.00%) of them had spontaneous miscarriage (6 (10.00%) women – one miscarriage and 3 (5.00%) – two miscarriages), 5 (8.33%) – induced abortions (one individual of them had two induced abortions), 5 (8.33%) – ectopic pregnancy, 1 (1.67%) – molar pregnancy, 3 (5.00%) – missed abortion. While in the control group only 2 (6.67%) subjects each had spontaneous miscarriage and induced abortion.

Primagravida women were the majority of the patients in both groups – 39 (65.00%) persons in the basic group and 17 (56.67%) – in the control one. Two pregnancies had respectively 10 (16.67%) and 8 (26.67%) patients, three or more pregnancies – 11 (18.33%) and 5 (16.67%). Primipara women predominated in both groups – 55 (91.67%) subjects in the basic

group and 19 (63.33%) controls, the current pregnancy was the second one in 5 (8.33%) individuals with CI and infertility in anamnesis and 8 (26.67%) healthy persons, the third pregnancy had 3 (10.00%) control women. Thus, the number of multipara women was less in 4.40 times in basic group (5 (8.33%) persons) compared to the controls (11 (36.67%) subjects; $\chi^2=9.13$; $p=0.003$). In anamnesis term labor had 4 (6.67%) persons with CI and infertility, preterm labor – 1 (1.67%), 10 (33.33%) healthy women had term labor ($\chi^2=8.89$; $p=0.003$).

CONCLUSION

Thus, the results of our study indicate that in the persons with cervical infertility and infertility associated with anovulation in anamnesis disorders in the reproductive system mostly start from the puberty period; the high rate of gynecological diseases, operations on the pelvic organs, pregnancy loss are typical for them.

Автор заявляє про відсутність конфлікту інтересів

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