

The optimization ways of pregnancy and labor management tactics in women after application of assisted reproductive technologies

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Optimization of pregnancy and labor management tactics in women after the application of assisted reproductive technologies (ART) at the present stage is the key to reduce the frequency of obstetric and perinatal complications and their prevention. *The objective:* to decrease the frequency of miscarriage and perinatal complications in women after ART application on base of clinic-psychological and laboratory-instrumental studies, optimization of the diagnostic and medical-preventive activities complex.

Materials and methods. Complex prospective and laboratory-instrumental study of 250 pregnant women and their newborns was conducted. 200 of these pregnant women were after ART application. The main group was formed by 100 pregnant women to who were applied our optimized diagnostic and medical-preventive activities complex to. The comparison group consisted of 100 pregnant women after ART application that was managed with the conventional antenatal care algorithm. The control group was formed by 50 healthy pregnant women with physiological course of the first pregnancy. Monitoring groups were comprised according to the age, parity and health.

Results. The obtained results indicate a high risk of obstetric and perinatal pathology development in women after the ART application. An ineffective individual preparation of the married couples to labors, chronic psycho-emotional stress on the background of the complicated obstetric and gynecological anamnesis and extragenital pathology in pregnant women after the ART application determines the high frequency of pregnancy miscarriage in the I trimester of pregnancy, late gestosis and functional state violations of the fetoplacental complex. All above mentioned factors contribute to the increase of perinatal loss level and the assessment of operative methods of delivery.

Conclusions. An application of the improved complex of diagnostic and medical-preventive activities in women after the ART application allows to reduce the frequency of spontaneous abortions from 33,0% to 8,7%; preterm labors from 7,8% to 3,2%; placental dysfunctions – from 56,0% to 38,0%; caesarean sections – from 83,0% to 50,5%; perinatal losses – from 34,0% to 15,2%.

Key words: pregnancy, labors, assisted reproductive technologies.

The actuality of the infertile marriage problem is difficult to overestimate. Its frequency according to the WHO data is 12–28% from the number of married couples and has no tendency to decrease. The strategy and tactics of the female infertility treatment provides an application of assisted reproductive technologies (ART), which are the most perspective [1, 2, 8]. However, the frequency of obstetric and perinatal pathology in women after the ART application has increased simultaneously. Pregnancy course features, which were the result of ART application, are determined due to the mature age of the patient, long-term period of infertility, inflammatory and dishormonal diseases in the gynecological anamnesis, extragenital pathology and psychological disadaptation of the pregnant women [1, 2, 4, 5]. The psychology of pregnancy after the ART application

is one of the less investigated problems in modern obstetrics. Even physiological pregnancy is related to the most qualms in the women's life, which is represented by the psycho-vegetative disorders [5, 6]. Massive hormonal therapy, which is used for the infertility treatment and for the support of the inducted pregnancy, provokes an activation of the immune processes and thrombophilic conditions, leads to the intention of subvert factors in violation of psycho-emotional condition of such pregnant women [3, 4, 9].

Issues of labors in women after the ART application acquire special interest. The introduction of innovative technologies of the partner management of labors contributes to the increase in the number of couples who have the desire to have independent physiological labors [6, 7]. The decrease of obstetric and perinatal pathology, realization of the physiological course of pregnancy and labor in women after the ART application in a case of absence of contraindications is a strategic task of modern science of practical obstetrics.

Despite the improvement of modern methods of antenatal monitoring a lot of complications in pregnant women after the ART remain unsolved, poorly studied and require further researches. All of the above was the reason to conduct this scientific research.

The objective: to decrease the frequency of miscarriage and perinatal complications in women after the ART application on base of clinic-psychological and laboratory-instrumental studies, optimization of the diagnostic and medical-preventive activities complex.

MATERIALS AND METHODS

Complex prospective and laboratory-instrumental study of 250 pregnant women and their newborns was conducted. 200 pregnant women after the ART application were randomized according to the principle of the conducted therapy on two groups. Main group was formed by 100 pregnant women with our optimized complex of diagnostic and medical-preventive activities. The group of comparison was formed by 100 pregnant women with the traditional methods of treatment and prophylaxis during pregnancy. The control group was formed by 50 healthy women with first physiological pregnancy. Monitoring groups were comprised according to the age, parity and the condition of extragenital and gynecological health.

Determination of the psycho-emotional condition and the manifestation of the stress load were conducted together with the perinatal psychologist using standard methods of psychological testing: SAN test, SUPOS-8 test, M. Lusher color test, autonomic symptom score by A. Wayne.

Dynamic clinic-instrumental and laboratory investigations were conducted to all pregnant women. It gave a possibility to evaluate the course of pregnancy from the moment of its beginning after the ART application till labors. The evaluation of the newborns' health condition was conducted together with a neonatologist and a pediatrician. In the hospital was created the room for psycho-emotional relief with the interior of nature, modulating the natural landscape, music with relaxing sedative and analgesic properties at the background of natural volatile essential lavender, mint and sage. The psycho-emotional correction sessions were daily conducted

between 3 and 4 pm during 25–30 minutes. On average the treatment period was 2–3 weeks.

Our optimized diagnostic and treatment complex consisted of the following activities:

- Application of medical-preventive activities complex, which consisted of mono hormonal therapy and non-medical methods during the pregnancy.

- Usage of innovative technologies, which are targeted on the partner labor motivation according to the system of individual couple preparation to the labors during pregnancy and delivery.

- Perinatal psychologist escort of the couple during pregnancy and labor in order to determine the emotional state of the pregnant woman and to correct in a case of necessity.

- Determination of the labor tactics management taking into account clinic-anamnesis data, psychological testing results, quantity of the ART attempts and clinical course of pregnancy.

The estimation of the course of pregnancy, labors, condition of a newborn was conducted in the way of individual patient's examination, data analyses of the individual antenatal cards, case histories of labors and newborns development. All data was included to the electronic database with further mathematical analysis.

RESULTS

The average age of women after the ART application was $29,4 \pm 2,5$ years. As for the control group it was $24,2 \pm 3,4$. That is determined by the presents of infertility and the duration of medical-preventive and rehabilitative activities. Mostly 80% of pregnant women after the ART application had high education and finances. City citizens – 73,8%, village livers – 26,2%.

Genital pathology analysis has confirmed the prevalence of the inflammatory processes, uterus cervix pathology in pregnant women of the main and the comparison groups. Menstrual cycle disorders during a reproductive period (abnormal uterine bleeding, dysmenorrhoea) were mentioned in 43,0% of women with infertility, which can be a probable background for the reproductive function disorders. The first sexual activity before age 18 years had 58,0% of pregnant women after the ART application versus 70,0% of control group of pregnant women ($p < 0,05$), who has had first sexual activity in later years.

The duration of infertility period in women after the ART application was $7,1 \pm 0,5$ years average. Primary and secondary infertility were observed in 39,0% and 61,0% respectively. The main reason of infertility in almost 80,0% of pregnant women after the ART application was tubo-peritoneal factor, which has determined high operation interventions on the appendages indexes. All women with endocrine infertility (cycts and ovarian cystomas, PCOS, endometriosis) were treated in the conservative way with the further laparoscopy-assisted surgical intervention and hormonal therapy. Among different variants of pregnancy anamnesis artificial and spontaneous abortions were most commonly observed.

Among extragenital diseases in groups of patients after the ART application cardio-vascular diseases and digastrics system pathology were most commonly mentioned

During testing according to the methods of SAN test, M. Lusher color test and studying of psycho-emotional condition by the method SUPOS-8 test, in pregnant women of the studied groups psychological sphere disorders in the form of violations in stress and relax balance indexes, energy accumulation and its waist, reduce of well-being and activity indexes, growth of destabilization influence and the level of disturbance were determined. All above was estimated as a subjective change in psycho-vegetative balance reflection, which leads to the development of chronic psycho-emotional stress condition.

The results of the conducted research represent the tendency of the high risk group formation (women after the ART application) of obstetric and perinatal pathology development as a result of high reproductive function violation frequency due to a significant level of genital and extragenital pathology.

Among the obstetric complications in pregnant women of the

main group and the comparison one the leading pathology was threatening of pregnancy termination – 26,0% and 88% respectively. In the control group this index was 12,0% only. Early gestosis was observed in 14,0% of the control group of pregnant women, in 18,0% of the main group and in 23,0% of the comparison one. The reproductive loss frequency before the 22nd weeks of gestation in the comparison group was 33,0%, by contrast with the main one – 8,7%.

Violations of the functional condition of the fetoplacental complex in women after the ART application can be one of the main reasons of the high level of perinatal loss (34%) and delivery be the means of caesarean section (83%), which was observed in the comparison group of women, who were treated with a general scheme only.

Analysis of the second half of pregnancy complications has revealed that proposed methods of examination and correction contributed to the decrease of pregnancy complications frequency. Frequency of the placental insufficiency in the main group was in 1, 5 time lower then in the comparison one – 38,0% and 56,0% respectively, in the control group – 4%.

The evaluation of the newborn's condition as an important index of the proposed prophylaxis and treatment complex effectiveness in women after the ART application is out of importance. Thus, in the main group the decrease of fetal distress rate to 11,0% against to 29,0% in the comparison one was noticed. Fetal growth retardation on the hypotrophic type was 12% against to 24% respectively. Preterm labors were 3,4 time more often observed in the comparison group. Gestational morpho-functional immaturity was diagnosed in 16,3% of main group of newborns and in 26,5% of comparison group. Intrauterine infectious index was 13,4% and 22,7% respectively. The amount of newborns with body mass 2500–3000 g in the main and the comparison groups were almost equal. But in the 2000 – 2500 g body mass interval the amount of newborns from the comparison group (18,5%) was reliably higher than in the main one (5,2%) ($p < 0,05$). That can be explained by the positive effect of the recommended therapy on the compensatory possibilities of the fetoplacental complex due to the preterm placenta insensescence prevention.

During the analysis of the pregnancy and labor course in women after the ART application was revealed that an administration of the proposed non-medical methods complex which consists of relaxing therapy by music, plant design and aero plant therapy with simultaneous tocolytic medical drugs admission allows to reach the maximal effect from treatment by the means of pathogenetic non-medical factors combination. Such combination reduces psycho-emotional and medical overload on organisms of mother and fetus. Inclusion of the pre labor individual couples preparation, which is targeted on the partner labor, to the complex of medical-preventive activities in women after the ART application has led to the relative numbers of gestational complication decrease (preterm pregnancy and labor threatening, gestosis, placental insufficiency, caesarean section from 83,0% to 50,5%) and stress overload significant decrease up to minimal manifestations in 72% of the main group of pregnant women against 18% in the comparison one.

CONCLUSIONS

The results of the conducted studies prove that our proposed diagnostics and medical-preventive activities complex, which includes an assessment of non-medical methods, effective psychological support and pregnancy and labor management technologies orientated on the partner's support conduce to decrease of obstetric and perinatal complications frequency, which had manifested on the background of complex gestational, social, psychological and emotional factors.

Assessment of the optimized tactics of pregnancy and labor management in women after the ART application allows to decrease the frequency spontaneous termination of pregnancy before 22 weeks of gestation from 33,0% to 8,7%; preterm labors from 7,8% to 3,2%; placental insufficiency from 56,0% to 38,0%; caesarian section from 83,0% to 50,5% and perinatal loss from 34,0% to 15,0% respectively.

Пути оптимизации тактики ведения беременности и родов у женщин после применения вспомогательных репродуктивных технологий
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Оптимизация тактики ведения беременности и родов у женщин после применения вспомогательных репродуктивных технологий (ВРТ) является гарантией снижения частоты акушерских и перинатальных осложнений и их профилактики.

Цель исследования: снижение частоты невынашивания беременности и перинатальных осложнений у женщин после применения ВРТ на основании изучения клинико-психологических и лабораторно-инструментальных исследований, оптимизации комплекса диагностических и лечебно-профилактических мероприятий.

Материалы и методы. Проведено комплексное проспективное клинико-психологическое и лабораторно-инструментальное обследование 250 беременных и их новорожденных, среди которых 200 женщин были после применения ВРТ. Из них в основную группу вошли 100 беременных после ВРТ, которым применяли оптимизированный нами комплекс диагностических и лечебно-профилактических мероприятий. В группу сравнения вошли 100 беременных после ВРТ, которым проведены общепринятые методы терапии и профилактики. В контрольную группу включены 50 здоровых женщин с физиологической первой беременностью. Группы наблюдения были сопоставимы по возрасту, паритету, наличию экстрагенитальной патологии и перенесенных гинекологических заболеваний.

Результаты. Полученные результаты свидетельствуют, что женщины после применения ВРТ составляют группу высокого риска по развитию акушерской и перинатальной патологии. Неэффективная индивидуальная подготовка супружеской пары к родам, хронический психоэмоциональный стресс на фоне отягощенного акушерско-гинекологического анамнеза и экстрагенитальной патологии у беременных после применения ВРТ обуславливают высокую частоту невынашивания беременности и репродуктивных потерь в I триместре, поздних гестозов и нарушений функционального состояния фетоплацентарного комплекса, являются одной из основных причин высокого уровня перинатальных потерь и оперативных методов родоразрешения.

Заключение. Использование усовершенствованного нами комплекса диагностических и лечебно-профилактических мероприятий у женщин после применения ВРТ позволяет снизить частоту самопроизвольного прерывания беременности до 22 нед с 33,0% до 8,7%; преждевременных родов – с 7,8% до 3,2%; плацентарной дисфункции – с 56,0% до 38,0%; кесарева сечения – с 83,0% до 50,5%, а также перинатальных потерь – с 34,0% до 15,2%.

Ключевые слова: беременность, роды, вспомогательные репродуктивные технологии.

Шляхи оптимізації тактики ведення вагітності та пологів у жінок після застосування допоміжних репродуктивних технологій
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Оптимізація тактики ведення вагітності і пологів у жінок після застосування допоміжних репродуктивних технологій (ДРТ) на сучасному етапі є запорукою зниження частоти акушерських і перинатальних ускладнень та їхньої профілактики.

Мета дослідження: зниження частоти невиношування вагітності і перинатальних ускладнень у жінок після застосування ДРТ на підставі вивчення клініко-психологічних та лабораторно-інструментальних досліджень, оптимізації комплексу діагностичних та лікувально-профілактичних заходів.

Матеріали та методи. Проведено комплексне проспективне клініко-психологічне і лабораторно-інструментальне дослідження 250 вагітних та їхніх новонароджених, серед яких 200 жінок були після застосування ДРТ. З них в основну групу увійшли 100 вагітних після ДРТ, яким застосовували оптимізований нами комплекс діагностичних і лікувально-профілактичних заходів. У групу порівняння увійшли 100 вагітних після ДРТ, яким застосовували загальноприйнятий алгоритм антенатального догляду. У контрольну групу включили 50 здорових жінок з фізіологічною першою вагітністю. Групи спостереження були зіставні за віком, паритетом, станом здоров'я.

Результати. Отримані результати свідчать про високий ризик розвитку акушерської і перинатальної патології у жінок після застосування ДРТ. Неefективна індивідуальна підготовка подружньої пари до пологів, хронічний психоeмоційний стрес на тлі обтяженого акушерсько-гинекологічного анамнезу та екстрагенітальної патології у вагітних після застосування ДРТ зумовлюють високу частоту невиношування вагітності та репродуктивних втрат у I триместрі, пізніх гестозів і порушень функціонального стану фетоплацентарного комплексу та e однією з основних причин високого рівня перинатальних втрат і оперативних методів розродження.

Заключення. Використання удосконаленого комплексу діагностичних та лікувально-профілактичних заходів у жінок після застосування ДРТ дозволяє знизити частоту мимовільного абoрту до 22 тиж з 33,0% до 8,7%; передчасних пологів – з 7,8% до 3,2%; плацентарної дисфункції – з 56,0% до 38,0%; кесарева розтину – з 83,0% до 50,5%, перинатальних втрат – з 34,0% до 15,2%.

Ключові слова: вагітність, пологи, допоміжні репродуктивні технології.

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