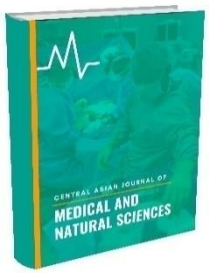
CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES



Volume: 03 Issue: 06 | Nov-Dec 2022 ISSN: 2660-4159

http://cajmns.centralasianstudies.org

Features of the Course of Pregnancy in Pregnant Women with Fetal Growth Restriction Syndrom and the Role of Doppler Velocimetry

1. Salimova T. B.

Received 6th Oct 2022,
Accepted 5th Nov 2022,
Online 19th Dec 2022

[1] Bukhara State Medical Institute, Master
toxtajans@gmail.com

Annotation: The analysis of somatic, gynecological pathology, peculiarities of the course of pregnancy in 50 pregnant women was carried out, 30 women of them of them were diagnosed with fetal growth restriction syndrome, and the remaining 20 were conditionally healthy pregnant women. For instrumental diagnostics, ultrasound dopplerometry was performed to assess utero-placental-fetal blood circulation. As a result of our research, it was revealed that among somatic and gynecological diseases there is a high frequency of anemia of moderate and severe degree, acute respiratory infections, COVID-19 and inflammatory diseases of the pelvic organs, and dopplerometry revealed an increase in the systolic-diastolic ratio, pulse index and resistance index in women with fetal growth retardation syndrome.

Keywords: fetal growth restriction syndrome, uteroplacental circulation, ultrasound dopplerometry.

Introduction. Fetal growth restriction syndrome (FGRS) occupies a huge place among the causes of perinatal morbidity and mortality.[4] This term refers to a decrease in the main photometric indicators and the body weight of a newborn below 10 percentiles relative to the proper values for a given gestational age or a lag of indicators from the proper ones for 2 weeks or more . According to the results of many studies, the risk factors for the occurrence of FGRS are divided into: maternal factors (hypertension during pregnancy, preeclampsia, gestational diabetes mellitus, lung disease, anemia, chronic renal failure, antiphospholipid syndrome, malnutrition and bad habits), fetal factors (genetic diseases, congenital malformations, intrauterine infections, multiple pregnancy pregnancy) and placental factors (placental insufficiency)[2]. In 35-40% of cases, occurs FGRS with maternal pathologies such as: pregnancy hypertension, preeclampsia, cardiovascular diseases, diabetes mellitus, as well as women with a low socio-economic level have a high risk.[1].

WHO data show that the number of newborns with fetal growth retardation syndrome in Central Asian countries reaches 31.1%. At the same time, these figures are much lower in developed European countries (up to 6.5%). In Russia, according to various authors, this syndrome is observed with a frequency of 2.4-17% of cases.[3,5,6].

According to the types of growth disorders , the following clinical forms of FGRS are distinguished:

- hypotrophic form , characterized by a predominant deficiency of body weight and clinical signs of reduced nutrition;
- hypoplastic form, in children with a relatively proportional decrease in all parameters of physical development;
- dystrophic form, characterized by pronounced imbalances, physique disorders, trophic disorders and edema against the background of a decrease in all parameters

The pathogenesis of FGRS is a violation of uteroplacental circulation, which leads to a violation of the metabolism and functional state of the fe tus and newborn[8].At the same time, there are violations of the transport, trophic, hormonal, metabolic, and antitoxic functions of the placenta underlying the pathology of the fetus and newborn[9].The dopplerometry technique is the leading method of studying blood circulation in the functional mother-placenta-fetus system and provides for obtaining curves of blood flow rates, calculating vascular resistance indices, and analyzing the results obtained. The carbon-independent indices of vascular resistance are determined: pulsation index, resistance index, systolic-diastolic ratio.[7].According to the classification of disorders of uteroplacental and fetal-placental circulation, there are three degrees of severity of hemodynamic disorders:

Grade I: A – violation of uteroplacental blood flow with preserved fetoplacental blood flow, B – violation of fetoplacental blood flow with preserved uteroplacental blood flow;

Grade II: simultaneous violation of uteroplacental blood flow and fetoplacental blood flow, not reaching critical changes (end-diastolic blood flow is preserved);

Grade III: critical disorders of fetoplacental blood flow (absence of blood flow or reverse diastolic blood flow) with preserved or disturbed uteroplacental blood flow.[5].

Goal. To study the features of the course of pregnancy in women with fetal growth retardation syndrome.

Materials and methods of research. To achieve this goal, we examined 50 pregnant women who were admitted to the city maternity complex of the city of Bukhara.All the examined pregnant women were divided into 2 groups: the main group consists of 30 pregnant women with fetal growth retardation syndrome and the control group consists of 20 conditionally healthy pregnant women.

The results of the study and their discussion.

The collection and analysis of somatic and gynecological anamnesis, the peculiarities of the course of pregnancy, as well as ultrasound dopplerometry of utero-placental-fetal blood flow for the prediction of fetoplacental system disorders were carried out. The results of the study and their discussion.All the examined pregnant women were aged 19 to 35 years, the average age of women in the main group was 25.2 ± 1.0 years, and in the control group 24.5 ± 1.2 years. All women were examined in the third trimester at a gestation period of 32 to 40 weeks. When studying the parity of the surveyed women, it was revealed that in the main group, the first-time pregnant women (22/43.3%) were less than the second-time pregnant women (28/56.7%), and in the control group, on the contrary, the first-time pregnant women (30/60%) were more than the second-time pregnant women..During the study of gynecological history, the percentage ratio in both groups was the same: chronic inflammatory diseases 17%, erosion 8%, fibroids 3%.The results of the study of the somatic anamnesis and the specific course of pregnancy are given in Tables No. 1 and 2.

Table №1: Somatic analyses of the examined pregnant women

Diseases	Main group		Control group	
	Absolut number	%	Absolut number	%
Anemia	17	48.5	7	35

Acute respiratory disease	10	28.5	5	25
COVID- 19	5	14.2	2	10
Urinary tract infection	3	8.5	3	15

According to Table No. 1, it can be seen that anemia and inflammatory diseases prevail among the somatic diseases of pregnant women.

Table No.2. Features of the course of pregnancy

	Main group		Control group	
	Absolut number	%	Absolut number	%
Pregnancy toxicosis	12	28.4	5	25
Threatening abortion	11	28.2	3	15
Preeclampsia	9	23	3	15
Discharge of amniotic fluid	4	10.2	2	10
Premature birth	6	15	1	5

According to the results of the table, it can be judged that the course of pregnancy of women in the main group is more burdened than in the control group. In the main groups, as the severity of SORP worsened, there was an increase in the number of detected ultrasound markers and the number of pregnant women with different ultrasound markers. This is, to a greater extent, seen by the decrease in the buccal index below 10 mm (in group I - 20 (44%), in II - 38 (73%), and in III - 42 (100%)pregnant women), to a lesser extent, by the presence of placental hypoplasia (in group I - 4 (22.2%), in II - 16 (38.4%), and in III - 24 (80%) pregnant women. A decrease in the buccal index is associated with underdevelopment of subcutaneous fat in fetuses with SORP, and placental hypoplasia is associated with placental insufficiency. Lack of water was found in group I in 3 (16.7%), in group II in 10 (23.8%), and in group III in 13 (43.3%) pregnant women. Moreover, the amniotic fluid index (AML) was moderate in group I from 5 to 8 cm, in group II from 2 to 5 cm, and expressed in group III less than 2 cm.

According to Fig.1, it can be judged with dysfunctional placental conditions in pregnant women of the main group, placental calcification occurs with a high frequency-86%, early placental aging - 74% and placental hypoplasia-33%. And low localization, placental edema and early maturation occur with lower frequency compared to the above. At the same time, placental calcification occurs in 12% of women in the control group, placental edema - 1%, placental hypoplasia-3%. Here we can conclude that in patients with a diagnosis of fetal growth retardation syndrome, cases of placental dysfunction are high.

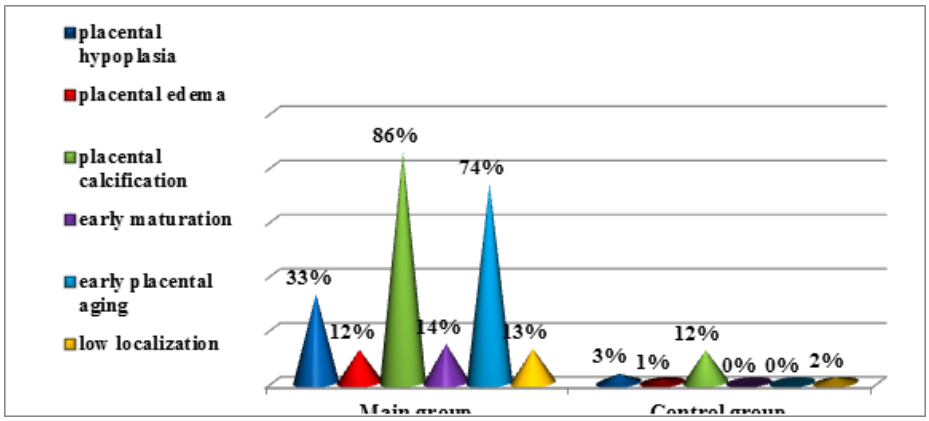


Fig.1-Ultrasound features of placenta in analysed groups

During ultrasound Dopplerometry, the changes in indicators in each vessel had their own characteristics. Thus there was gradual increase 1.2 times more in the systolic-diastolic ratio, pulse index and resistance index of the uterine arteries and the umbilical artery of pregnant women of the main group, compared to the indicators of the control group, while the same indicators in the middle cerebral artery decreased slightly and here we can see the compensatory mechanism of the body.

Since the patients of the main group had different degrees of hemodynamic disorders in the arteries of the functional mother-placenta-fetus system, we analyzed their occurrence. Among 30 patients of the main group, hemodynamic disorders of placental circulation were absent in 4 (13.3%) pregnant women at the time of the study, The I degree of hemodynamic disorders were found in 10 (33.3%) patients, of which fetal hypotrophy was noted in 4 (40%) ; II degree - in 5 (16.7%), of which fetal hypotrophy was noted in 3 (60%) ; III degree - in 7 (23.3%), of which 5 (71.4%) have fetal hypotrophy, 4 (13.3%) patients have critical blood flow disorders, of which 3 (75%) have fetal hypotrophy (Fig.2).

We had analysed of the results of the Doppler study of placental blood flow by comparing the values of vascular resistance indicators in the main arteries such as uterine, umbilical and middle cerebral arteries. In the patients of the main group in the uterine arteries and umbilical cord arteries, vascular resistance indicators were higher than in pregnant women of the control group.

The study of these indicators in the middle cerebral artery shows minor changes compared to women in the control group. Thus, fetuses of patients of the main group with the same frequency had different degrees of hemodynamic disorders of placental circulation - from the first to critical. Dopplerometric parameters of blood flow in the middle cerebral artery of fetuses of the main group were less than similar parameters in pregnant women of the control group.

Conclusion.

Thus, according to our research, pregnant women in our region at 28-32 weeks of gestation have a high incidence of moderate and severe anemia, acute respiratory infections, COVID-19 and inflammatory diseases of the pelvic organs, among somatic and gynecological diseases, which are the cause of incomplete invasion of the trophoblast in the first trimester of pregnancy and the development of fetal growth retardation syndrome. As a result of our Doppler studies conducted from 28 to 32 weeks of pregnancy, the features of circulatory disorders in the "mother-placenta-fetus" system with fetal growth retardation syndrome were established. With fetal growth retardation syndrome, ultrasound dopplerometry of the fetoplacental complex is not always reliable. However, our studies revealed a significant increase in the value of in systolic-diastolic ratio, pulse index and resistance index the umbilical cord arteries, which is an indicative indicator of fetal growth retardation syndrome and the use of this method in early pregnancy allows the prediction and diagnosis of dysfunction in the placental system, as well as the correction of these disorders occurring in the mother-placenta-fetus system.

Literatures:

1. Abdullaev, S., Rahmanov, U., Abdullaeva, L., & Toirov, A. (2020). Reviews of complications and treatment tactics for external hernias of the anterior abdominal wall. European Journal of Molecular & Clinical Medicine, 7(2), 2434-2439.
2. Abdullaeva, L. M. (2009). Clinical and histological characteristics of benign ovarian masses. Attending Physician , (8), 54-56.
3. Abdullaeva, L. M. (2012). Clinical and histological characteristics of benign ovarian masses. Women's Health , (2), 197-198.

4. Abdullaeva, L. M., & Donika, A. D. (2016). Iatrogeny on the model of operative gynecology. International Journal of Experimental Education , (5-2), 177-178.
5. Aslanova M.Zh., Ikhtiyarova G.A., Hafizova D.B., Mirzoeva M.R. Microbiological and hormonal characteristics of the formation of non-developing pregnancy. Fundamental and practical issues of immunology and infectology. Collection of scientific articles by participants of the international scientific and practical conference.UFA-2018.pp.9-15.
6. Aslonova MJ, Ikhtiyarova GA, Mavlyanova NN. Association of ITGB3 gene polymorphisms with the risk of developing fetal growth restriction syndrome. MOJ Women's Health. 2021;10(4):97–100. DOI: 10.15406/mojwh.2021.10.00296
7. Ihtiyarova, G. A. (2013). Modern and differentiated approaches to the management of pregnant with a dead fetus. International Journal of Applied and Fundamental Research, (2), 191-191.
8. Ikhtiyarova, G. A., Karimova, G. K., & Navruzova, N. O. (2019). KhairullaevCh. K. Ultrasound diagnostics of diabetic fetopathy in pregnant women with metabolic syndrome on the background of diabetes mellitus. Medicine and sports2019, (3-4), 56-58.
9. Ikhtiyarova, G. A., Navruzova, N. O., & Karimova, G. K. (2019). Modern diagnostic methods for early detection of cervical diseases. Doctor akhborotnomasi, (4), 78-80.
10. Ikhtiyarova, G. A., Tosheva, I. I., Aslonova, M. J., & Dustova, N. K. (2020). Prenatal rupture of amnion membranes as A risk of development of obstetrics pathologies. European Journal of Molecular and Clinical Medicine, 7(7), 530-535.
11. Karimova, G. K., Navruzova, N. O., & Nurilloyeva Sh, N. (2020). An individual approach to the management of gestational diabetes. European Journal of Molecular & Clinical Medicine, 7(2), 6284-6291.
12. **Narzullaeva N. S.,_Ixtiyarova G. A.,_Berdiyev A. Sh.** (2022). Clinical and Immunologycal Aspecys of Leomioma with Endometritis. Central Asian Journal of Medical and Natural Science, 3(4), 301-305.
13. Narzullaeva, N. S. (2021). Gynecologicaland somatic history of women with uterine myoma according to retrospective analysis. Акуш., гинекол., перинатол, (2), 86.
14. Navruzova, N. O. (2022). Treatment of mixed vulvaginitis in women with inflammatory diseases of the cervical and genital. International journal of health systems and medical sciences, 1(4), 323-330.
15. Navruzova, N. O., Ikhtiyarova, G. A., & Karimova, G. K. (2020). Colposcoria as a diagnostic method for early detection of cervical diseases. Problems of Biology and Medicine,(1.1), 117.
16. Navruzova, N. O., Ikhtiyarova, G. A., & Matrizayeva, G. D. (2021). Modern aspects of diagnosis and treatment of precancerous diseases of the cervix. Journal of Natural Remedies, 22(1 (2)), 65-72.
17. Navruzova, N. O., Karimova, G. K., & Ikhtiyarova, G. A. (2020). Modern approaches to the diagnosis of cervical pathology. Medicine and sports,(1), 74-77.
18. Navruzova, N. O., Karshiyeva, E. E., Ikhtiyarova, G. A., Hikmatova, N. I., Olimova, N. I., & Muminova, N. K. (2021). Clinical and laboratory markers forecasting of cervical diseases and its prevention. Annals of the Romanian Society for Cell Biology, 13098-13110.
19. Navruzova, N. O., Karshiyeva, E. E., Kattakhodjayeva, M. K., & Ikhtiyarova, G. A. (2022). Methods for diagnosing diseases of the uterine cervix. Frontiers in Bioscience-Landmark, 27(1), 20-28.

20. Navruzova, N., Ikhtiyarova, G., & Navruzova, O. Retrospective analysis of gynecological and somatic anamnesis of cervical background and precancerous diseases. SCIENTIFIC PROGRESS» Scientific Journal ISSN, 2181-1601.
21. Navruzova, U. O., Khamidova, N. Q., & Yusupov, S. H. (2019). A. Featurus of Periodontitis in Metabolo c Disorders. European journal of pharmaceutical and medical research, 3, 108-113.
22. Salimova, T. B. Homila O'sishi Chegaralanishi Sindromi Bilan Homilador Ayollarda-Homiladorlikning Kechishi Va Uning Diagnostikasida Dopplerometriyaning O'rni.
23. Аслонова М. Ж. Ҳомила Ўсиши Чегараланш Синдроми Мавжуд Ҳомиладорларда Интегрин Алфа-2 (Тромбоцитлар Гликопротеини Ia/Iia)(Itga2) Гени Полиморфизми Аниқланишини Баҳолаш //Amaliy va tibbiyot fanlari ilmiy jurnali. – 2022. – т. 1. – №. 5. – с. 29-37.
24. Аслонова М. Ж., Ихтиярова Г. А., Мавлянова Н. Н. Оценка выявляемости полиморфизма гена интегрин альфа-2 (гликопротеин ia/iia тромбоцитов plaii)(itga2) у беременных с синдромом ограничения роста плода //NAZARIY va KLINIK TIBBIYOT. – С. 19.
25. Ихтиярова Г.А., Наврузова Н.О., Каримова Г.К. Современные диагностические методы для раннего выявления заболеваний шейки матки// Доктор ахборотномаси, 2019. № 4. С. 78-80.
26. Ихтиярова Г.А., Тошева И.И., Нарзуллоева Н.С. (2017). Причины синдрома потери плода на разных сроках гестации. Азиатский журнал исследований , (3), 3.
27. Ихтиярова Г.А., Тошева И.И., Нарзуллоева Н.С. (2017). Причины синдрома потери плода на разных сроках гестации. Азиатский журнал исследований , (3), 3.
28. Ихтиярова, Г. А., Каримова, Г. К., Наврузова, Н. О., & Хайруллаев, Ч. К. (2019). Ультразвуковая диагностика диабетической фетопатии у беременных с метоболическим синдромом на фоне сахарного диабета. Тиббиёт ва спорт, (3-4), 56-58.
29. Ихтиярова, Г. А., Наврузова, Н. О., & Муминова, Н. Х. (2022). Бачадон бўйни рак олди касалликлари дифференциал диагностикасини такомиллаштириш усули. Eurasian Journal of Medical and Natural Sciences, 2(8), 4-17.
30. Каримова Г.К., Наврузова Н.О. и Нуриллоева Ш.Н. (2020). Индивидуальный подход к ведению гестационного диабета. Европейский журнал молекулярной и клинической медицины , 7 (2), 6284-6291.
31. Каримова, Г. К., Ихтиярова, Г. А., & Наврузова, Н. О. (2020). Скрининг диагностика гестационного диабета. Новый день в медицине, (1), 220-222.
32. Наврузова Н.О. (2022). Лечение смешанного вульвагинита у женщин с воспалительными заболеваниями шейки матки и половых органов. Международный журнал систем здравоохранения и медицинских наук , 1 (4), 323–330.
33. Наврузова Н.О., Ихтиярова Г.А., Каримова Г.К. (2020). Кольпоскория как диагностический метод раннего выявления заболеваний шейки матки. Проблемы биологии и медицины, (1.1) , 117 .
34. Наврузова Н.О., Каримова Г.К. и Ихтиярова Г.А. (2020). Современные подходы к диагностике патологии шейки матки. Медицина и спорт,(1) , 74-77.
35. Наврузова Н.О., Каршиева Э.Э., Ихтиярова Г.А., Хикматова Н.И., Олимова Н.И. и Муминова Н.К. (2021). Клинико-лабораторные маркеры прогнозирования заболеваний шейки шейки и его профилактика. Анналы Румынского общества клеточной биологии , 13098-13110.

36. Наврузова, Н. (2018). Бачадон бўйни касалликларини ташхислаш ва даволашнинг замонавий масалалари.
37. Наврузова, Н. О. (2022). Бачадон бўйни патологиясини клиник-лаборатория маркерларини башоратлаш ва унинг профилактикаси. Barqarorlik va yetakchi tadqiqotlar onlayn ilmiy jurnali, 2(8), 89-99.
38. Наврузова, Н. О. (2022). Бачадон бўйни патологиясининг ретроспектив килиник ва лаборатор кўрсаткичлари. Amaliy va tibbiyot fanlari ilmiy jurnali, 1(5), 68-73.
39. Наврузова, Н. О. (2022). Диагностика заболеваний шейки матки в современном гинекологии. Barqarorlik va yetakchi tadqiqotlar onlayn ilmiy jurnali, 2(9), 63-77.
40. Наврузова, Н. О., & Гулчехра, А. (2021). Ихтиярова и Гульнора Дж. Матризаева.«Современные аспекты диагностики и лечения предраковых заболеваний шейки шейки матки». Журнал природных средств правовой защиты, 22(2), 65-72.
41. Наврузова, Н. О., Ихтиярова, Г. А., & Каримова, Г. К. (2020). Кольпоскория как диагностический метод для раннего выявления заболеваний шейки матки. Проблемы биологии и медицины, 1, 117.
42. Наврузова, Н. О., Ихтиярова, Г. А., & Матризаева, Г. Д. (2021). Современные аспекты диагностики и лечения предраковых заболеваний шейки шейки матки. Журнал природных средств правовой защиты, 10, 65-72.
43. Наврузова, Н. О., Каримова, Г. К., & Ихтиярова, Г. А. (2020). Современные подходы к диагностике патологии шейки матки. Тиббиёт ва спорт,(1), 74-77.
44. Наврузова, Н. О., Каршиева, Э. Э., Ихтиярова, Г. А., Хикматова, Н. И., Олимова, Н. И., & Муминова, Н. К. (2021). Клинико-лабораторные маркеры прогнозирования заболеваний шейки шейки и его профилактика. Анналы Румынского общества клеточной биологии, 13098-13110.
45. Наврузова, Н., Ихтиярова, Г., & Наврузова, Ў. (2020). Бачадон бўйни фон ва рак олди касалликларининг гинекологик ва соматик анамнезининг ретроспектив таҳлили. Scientific progress, 1(2), 25-32.
46. Наврузова, Н., Ихтиярова, Г., Наврузова, У., Каримова, Г., Шукуров, И., & Аманова, Х. (2019). Современные диагностические методы для раннего выявления заболеваний шейки матки. Журнал вестник врача, 1(4), 78-83.
47. Наврузова, У. О. К. (2019). Особенности пародонтита при нарушении обмена веществ. Биология и интегративная медицина, (2 (30)), 28-42.
48. Наврузова, У. О. К. (2019). Современные аспекты этиопатогенеза генерализованного пародонтита (обзор литературы). Биология и интегративная медицина, (2 (30)), 62-89.
49. Нарзуллаева, Н. С., Тошева, И. И., Мирзоева, М. Р., & Ихтиярова, Д. Ф. (2018). Клинические и иммунологические аспекты миомы матки в сочетании с различными инфекциями. Редакционная коллегия, 232.
50. Тошева И.И., Ихтиярова Г.А. и Аслонова М.Дж. (2019). Внедрение родов у женщин с изливанием амниотической жидкости при внутриутробной смерти плода. Проблемы и решения перспективных научных исследований , 1 (1), 417-424.