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ANALYSIS OF THE RESULTS OF SEVERE OLIGOHYDROAMNIONS IN PREGNANT WOMEN IN THE PERINATAL CENTER OF PAVLODAR FOR 2018 YEAR

Aizhan Zh. Alipanova ¹, <http://orcid.org/0000-0003-4592-0014>
Zhansulu E. Akylzhanova ¹, <https://orcid.org/0000-0001-6855-127X>
Tatiana M. Dernova ¹, <https://orcid.org/0000-0001-7609-1568>
Oksana I. Shalbaeva ¹, <https://orcid.org/0000-0002-9646-1981>

¹ Department of Emergency Medicine, Obstetrics and Gynecology course
Pavlodar branch of the NCJSC "Semey Medical University"
Pavlodar c., Republic of Kazakhstan

Summary

Relevance: One of the insufficiently studied sections in the perinatal obstetrics is the pathology of amnion, particularly oligohydramnios, characterized by reducing the amount of amniotic fluid in the second half of pregnancy, decline the vertical depth of the pocket - 2 cm or less or amniotic fluid index of less than 5 cm. Estimation of the volume of amniotic fluid is an integral part of antenatal care. Physiological fluid volume increases with gestational age up to 36-37 weeks. The relationship of oligohydramnios with high rates of perinatal mortality in the modern obstetrics determines the relevance of the study.

Objective: to identify the risk factors of severe oligohydramnios, examine the condition of the fetus during pregnancy, the methods of delivery and perinatal outcomes at the oligohydramnios.

Materials and methods: Study design - retrospective study. For the period 01.01 to 09/31/2018y was 3036 labors, out of which labors with oligohydramnios amounted 222 labors 7.3%. The analysis of the work consisted in comparing 2 groups of women with moderate and severe oligohydramnios. The main group consisted of 24 pregnant women with severe oligohydramnios. The control group included 29 pregnant women with oligohydramnios of moderate severity. The formation of a database of research and calculation of statistical indicators has been produced with the help of a licensed program SPSS 20.0 (IBM Ireland Product Distribution Limited, Ireland). For the statistical results using Student's t-test.

Results and discussion. At the studying medical records, both groups did not undergo pregravid preparation before pregnancy. In the study of anamnesis and complications during pregnancy found that acute respiratory, infectious disease during pregnancy in the main group is - 5(20.8%), in the control group - 4(10.3%). Gestational diabetes mellitus during pregnancy was diagnosed in the main group of 1(4.1%), in the control group 5(17.2%). Pre-eclampsia was complicated by labor in the main group 9(37.5%), and 5(17.2%) in the control group. In the study of somatic anamnesis, there is a high frequency of anemia of any degree in the main group 9(37.5%), in the control group 7(24.1%), a violation of fat metabolism in the main group 3(10.3%), in the control group 3(12.5%). 7(29.1%) of the main group had in anamnesis abortions and miscarriages, and in the control group 7(24.1%).

There is a large percentage of prenatal complications at severe oligohydramnios, associated with the fetus. Violation of fetal-placental circulation in the main group is 5(20.8%), in the control group - 4(10.3%). Developmental delay syndrome of fetus in the main group is 8(33.3%), while in control group - 6(20.6%). In the intranatal period were noted such complications as: passage of meconium into the amniotic fluid in the main group - 2(8.3%) and in the control group - 1(3.4%); life-threatening conditions of fetus according to cardiotocography assessment - 12(50%) in the main group and 6 (20.6%) in the control group, respectively; weakness of labor activity was observed in women with severe oligohydramnios 1 (2.4%). In oligohydramnios, the number of operative labor is 2 times higher. In the main group, vaginal delivery in -13(54%), operative delivery in - 11(46%). The control group had 12(41%) births through the birth canal, operative delivery in 17(59%). The perinatal outcomes of our analysis were rated on the Apgar scale: up to 5 points, in the main group -5(20.8%), and to the control group -2(6.8%), up to 7 points, in the main group is 10(41.6%) and in the control group -3(10.3%); and more than 7 points 9(37.6%) in main group and in the control group is 24(82.9%). This fact again shows that severe oligohydramnios affects the condition of the newborn. All newborns who born in serious condition were transferred to the neonatal intensive care unit.

Conclusions: Thus, the combination of pregnancy with extragenital pathology increases the risk of developing placental dysfunction and fetal hypoxia, which can affect the change in the quantity of amniotic fluid, next oligohydramnios significantly worsens the prognosis for the fetus and newborn. In the presence of severe oligohydramnios, placental insufficiency, threatened fetus condition, oligohydramnios should be considered as an aggravating factor of high perinatal risk, which is justified, expands the indications for emergency delivery in the interests of the fetus.

Key words: *oligohydramnios, placental insufficiency, caesarean section, newborn.*

Резюме

АНАЛИЗ РЕЗУЛЬТАТОВ ТЯЖЕЛЫХ МАЛОВОДИЙ У БЕРЕМЕННЫХ ЖЕНЩИН ПО ПЕРИНАТАЛЬНОМУ ЦЕНТРУ ГОРОДА ПАВЛОДАР ЗА 2018 ГОД

Айжан Ж. Алипанова ¹, <http://orcid.org/0000-0003-4592-0014>**Жансулу Е. Акылжанова** ¹, <https://orcid.org/0000-0001-6855-127X>**Татьяна М. Дернова** ¹, <https://orcid.org/0000-0001-7609-1568>**Оксана И. Шалбаева** ¹, <https://orcid.org/0000-0002-9646-1981>

Кафедра неотложной медицины, курс акушерства и гинекологии
Павлодарский филиал НАО «Медицинский университет Семей»,
г. Павлодар, Республика Казахстан.

Актуальность: Одним из недостаточно изученных участков в перинатальном акушерстве является патология амниона, особенно маловодие, характеризующаяся уменьшением количества околоплодных вод во второй половине беременности, уменьшением вертикальной глубины кармана - на 2 см или более или индекс амниотической жидкости менее 5 см. Оценка объема околоплодных вод является неотъемлемой частью родового наблюдения. Объем физиологической жидкости увеличивается с гестационным возрастом до 36-37 недель. Связь маловодия с высокими показателями перинатальной смертности в современном акушерстве определяет актуальность исследования.

Цель: выявить факторы риска развития тяжелых маловодий, изучить состояние плода во время беременности, методы родов и перинатальные исходы маловодий.

Материалы и методы: Ретроспективное исследование проведено в Павлодарском областном перинатальном центре. За период с 01.01.2018 г. по 09.31.2018 г. было 3036 родов, из которых роды с маловодием составили - 222 родов (7,3%). Был проведен анализ 2 групп женщин с маловодием средней и тяжелой степени тяжести. Основную группу составили 24 беременных с тяжелой формой маловодия. Контрольную группу составили 29 беременных с маловодием средней степени тяжести. Формирование базы данных исследований и расчета статистических показателей было произведено с помощью лицензионной программы SPSS 20.0. Для статистического результата использовали критерий Т-критерий Стьюдента.

Результаты и обсуждение. При изучении медицинских карт обе группы не проходили прегравидарную подготовку до беременности. При исследовании анамнеза и осложнений во время беременности установлено, что острые респираторные, инфекционные заболевания во время беременности в основной группе составляют - 5(20,8%), в контрольной группе - 4(10,3%). Гестационный сахарный диабет во время беременности был диагностирован в основной группе - 1(4,1%), в контрольной группе - 5(17,2%). Преэклампсия осложнила роды в основной группе - 9(37,5%), а в контрольной группе - 5(17,2%). При исследовании соматического анамнеза наблюдается высокая частота анемии любой степени в основной группе - 9(37,5%), в контрольной группе - 7(24,1%), нарушение жирового обмена в основной группе - 3(12,5%), в контрольной группе - 3(10,3%). 7(29,1%) основной группы имели в анамнезе аборт и выкидыши, а в контрольной группе - 7 (24,1%).

Существует большой процент внутриутробных осложнений при тяжелых маловодиях, связанных с плодом. Нарушение плода-плацентарного кровообращения в основной группе составляет 5 (20,8%), в контрольной группе - 3(10,3%). Синдром задержки развития плода в основной группе составляет 8 (33,3%), а в контрольной группе - 6(20,6%). В интранатальном периоде были отмечены такие осложнения, как: прохождение мекония в околоплодные воды в основной группе - 2(8,3%) и в контрольной группе - 1(3,4%); опасные для жизни состояния плода по данным кардиотокографической оценки - 12(50%) в основной группе и 6(20,6%) в контрольной группе соответственно; слабость родовой деятельности наблюдалась у женщин с тяжелой формой маловодия - 1(2,4%). При тяжелом маловодии количество оперативных родов в 2 раза выше. В основной группе родов вагинальные роды в 13(54%), оперативные роды в - 11(46%). Контрольная группа имела 12(41%) родов через родовую канал, оперативные роды в 17(59%). Перинатальные результаты нашего анализа оценивались по шкале Апгар: до 5 баллов, в основной группе - 5 (20,8%), в контрольной группе - 2(6,8%), до 7 баллов, в основной группе - 10(41,6%), а в контрольной группе - 3(0,3%); и более 7 баллов 9 (37,6%) в основной группе и в контрольной группе - 24(82,9%). Этот факт еще раз показывает, что тяжелое маловодие влияет на состояние новорожденного. Все новорожденные, которые родились в тяжелом состоянии, были переведены в отделение интенсивной терапии новорожденных.

Выводы: Таким образом, сочетание беременности с экстрагенитальной патологией повышает риск развития плацентарной дисфункции и гипоксии плода, что может повлиять на изменение количества околоплодных вод. Маловодие значительно ухудшает прогноз для плода и новорожденного. При наличии тяжелых маловодий, плацентарной недостаточности, угрожающего состояния плода, маловодие следует рассматривать как отягчающий фактор высокого перинатального риска, что оправдано, расширяет показания к экстренному родоразрешению путем оперативных абдоминальных родов в интересах плода.

Ключевые слова: маловодие, плацентарная недостаточность, кесарево сечение, новорожденный.

Түйіндеме

2018 Ж ПАВЛОДАР ҚАЛАСЫНЫҢ ПЕРИНАТАЛДЫҚ ОРТАЛЫҒЫ БОЙЫНША ЖҮКТІ ӘИЕЛДЕРДЕГІ АУЫР СУАЗДЫҒЫНЫҢ НӘТИЖЕЛЕРІН ТАЛДАУ

Айжан Ж. Алипанова ¹, <http://orcid.org/0000-0003-4592-0014>

Жансулу Е. Акылжанова ¹, <https://orcid.org/0000-0001-6855-127X>

Татьяна М. Дернова ¹, <https://orcid.org/0000-0001-7609-1568>

Оксана И. Шалбаева ¹, <https://orcid.org/0000-0002-9646-1981>

¹ Жедел медицина кафедрасы, акушерия мен гинекология курсы
«Семей медицина университеті» КеАҚ, Павлодар филиалы
Павлодар қаласы, Қазақстан Республикасы

Өзектілігі: Перинаталды акушериядағы толық зерттелмеген тараулардың бірі қағанақ суы патологиясы, оның ішінде жүктіліктің екінші жартысындағы қағанақ суының азаюымен, вертикальды қапшықтың - 2см және одан төмен немесе амниотикалық сұйықтық индексінің 5 см төмендеуімен сипаталатын жүктілердің суаздығы. Амнионды сұйықтықты бағалау босануға дейінгі бақылаудың ажырамас бөлігі болып табылады. Сұйықтықтың физиологиялық көлемі жүктіліктің мерзімімен бірге 36-37 аптаға дейін ұлғаяды. Қазіргі заманғы акушерияның перинаталды бағытындағы суаздықтың перинаталды өлімнің жоғары көрсеткішімен байланысы өткізілгелі отырған зерттеудің өзектілігін дәлелдейді.

Зерттеудің мақсаты: суаздықтың ауыр дәрежесінің қауіп факторларын анықтау, суаздық жағдайындағы жүктілік кезінде ұрық жағдайын, босандыру әдістерін және перинаталды нәтижелерді зерттеу.

Материалдар мен әдістер: Зерттеу құрылымы – ретроспективті талдау. 2018 жылдың 01.01.мен 31.09. аралығында 3036 босану болды, оның ішінде суаздықпен босану 222 - 7,3% құрады. Жұмыстың талдауы суаздықтың орташа және ауыр дәрежесі бар әйелдердің екі тобын салыстыру болып табылады. Негізгі топқа суаздықтың ауыр дәрежесі бар 24 әйел кірді. Бақылау тобын суаздықтың орташа дәрежесі бар 29 әйел құрады. Зерттеудің мәліметтер базасын және статистикалық көрсеткіштерді санау лицензионды SPSS 20.0 бағдарламасымен жүзеге асырылды. Статистикалық нәтиже үшін Стьюдента критериялары қолданылды

Нәтижелер: Медициналық құжаттарды зерттеу барсында екі топта да жүктілікке дейінгі предгравидарлы дайындықтан өтпеген. Анамнезін және жүктілік кезіндегі асқынулар зерделей келе анықталды: жүктілік кезіндегі жедел респираторлы, жұқпалы аурулар негізгі топта –5 (20,8%), бақылау тобында 4(10,3%) кездесті. Жүктілік кезінде гестациялық қантты диабет негізгі топта – 1(4,1%), бақылау тобында 5(17,2%). Босану преэклампсиямен асқынды негізгі топта 9(37,5%), және 5(17,2%) бақылау тобында. Соматикалық анамнезін зерттеу кезінде негізгі топта анемияның кез келген дәрежесінің жоғарғы көрсеткіші анықталды – 9(37,5%), бақылау тобында 7(24,1%), май алмасу бұзылысы негізгі топта 3(10,3%), бақылау тобында 3(12,5%). Негізгі топтың 7(29,1%) анамнезінде аборт және түсіктер болса, ал бақылау тобында 7(24,1%). Суаздықтың ауыр дәрежесінде ұрықтың босануға дейінгі асқынуларының жоғары пайызы байқалады. Ұрық-плацентарлы қанайналым бұзылысы негізгі топта 5(20,8%), бақылау тобында 4(10,3%). Ұрықтың дамуының кідіруі синдромы негізгі топта 8(33,3%), бақылау тобында 6(20,6%). Интранаталды кезеңде келесідей асқынулар байқалды: меконийдің амнионды сұйықтыққа шығуы негізгі топта 2 (8,3%), және бақылау тобында - 1(3,4%); кардиотокография бағалауымен ұрықтың қауіп жағдайы 12(50%) негізгі топта және 6(20,6%) бақылау тобында сәйкесінше; босану қызметінің әлсіздігі суаздықтың ауыр дәрежелі әйелдерде 1(2,4%) анықталды. Суаздық кезінде оперативті босандыру жиілігі 2 есе артық. Негізгі топта қынаптық босану 13(54%), оперативті босандыру 11(46%). Бақылау тобында 12(41%) босану табиғи жолмен, оперативті босану 17(59%). Біздің талдауда перинаталды нәтижелер Апгар кестесімен бағаланды, 5 баллға дейін негізгі топта 5(20,8%), ал бақылау тобында 2(6,8%), 7 баллға дейін негізгі топта 10(41,6%), бақылау тобында 3(10,3%) және 7 баллдан жоғары негізгі топта 9(37,6%), бақылау тобында 24(82,9%) бұл деректер суаздықтың ауыр дәрежесі жаңа туған нәресте жағдайына әсер ететінін көрсетеді. Ауыр жағдайда туған жаңа туғандар нәрестелер реанимация бөлімшесіне ауыстырылды.

Қортынды: Сонымен, экстрагенитальды патологиясы бар жүктілік, плацентарлы дисфункция мен ұрық гипоксиясы даму қаупін жоғарылатады, ал ол өз кезегінде қағанақ суының мөлшерінің өзгерісіне әкеліп, суаздықтың ауыр дәрежесі ұрық пен жаңа туған нәрестенің болжамын қиындатады. Суаздықтың ауыр дәрежесі, плацентарлы жетіспеушілік, ұрықтың қауіп жағдайы бар кезде суаздықты ұрық жағдайы үшін жедел босандыруға көрсеткіштерді кеңейтетін, перинаталды жоғары қауіпін ауырлатушы фактор ретінде қарастыру қажет.

Негізгі сөздер: суаздық, плацентарлы жетіспеушілік, кесарь тілігі, жаңа туған нәресте.

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Relevance

One of the insufficiently studied sections in the perinatal obstetrics is the pathology of amnion, particularly oligohydramnios, characterized by reducing the amount of amniotic fluid in the second half of pregnancy, decline the vertical depth of the pocket - 2 cm or less or amniotic fluid index of less than 5 cm. Estimation of the volume of amniotic fluid is an integral part of antenatal care. Physiological fluid volume increases with gestational age up to 36-37 weeks. Amniotic fluid performs several functions, including protecting the fetus from injury and infection, promote lung development and facilitate the development and movement of limbs and other skeletal parts. At the same time, in spite of the diversity and importance of the amnion medium functions, remains relatively limited number of studies devoted to this problem, in particular, oligohydramnios.

Violations of the amniotic fluid volume can contribute to the development of pregnancy complications and even fetal death. Amniotic fluid reduction may carry to increasing risk of complications during parturition at a high-risk pregnancy [6]. In severe oligohydramnios perinatal mortality rises 13 times [6]. In this regard, the amount of amniotic fluid and its composition are considered markers for prenatal risk evaluation [6]. The main reasons of the oligohydramnios are considered congenital anomalies, mainly urinary system (kidney agenesis, polycystic, urinary tract obstruction) and lungs (tracheal atresia, disorders of the pulmonary fluid production), placental insufficiency, post-term pregnancy, premature rupture of fetal membranes [7]. Complications of pregnancy and adverse effects for the fetus, caused by oligohydramnios, associated with lower fetal weight, staining of the amniotic veins with meconium, aspiration with meconium, lowering of umbilical cord pH, lower values of the Apgar scores, development of respiratory distress syndrome [8, 9].

The relationship of oligohydramnios with high rates of perinatal mortality in the modern obstetrics determines the relevance of the study.

Objective: to identify the risk factors of oligohydramnios, examine the condition of the fetus during pregnancy, the methods of delivery and perinatal outcomes at the oligohydramnios.

Study design: Retrospective study.

Materials and methods: The study was conducted on the basis of Pavlodar regional perinatal center, where for the period 01.01.2018 to 09.31/2018 y. was 3036 labors, out of which labors with oligohydramnios amounted 222 (7.3%) labors At the study are provided retrospective analysis of the course of pregnancy and labors was carried

out in 222 patients with singleton pregnancies, without a scar on the uterus and whole fetal bladder. We have been studied and analyzed the primary medical documentation: individual cards of pregnant women, labors history, neonatal history, ultrasound diagnostic protocols. Oligohydramnios fact confirmed in all groups by ultrasound protocol in terms of diagnosing oligohydramnios, the Ministry of Health of the Republic of Kazakhstan from the 27th of December 2017. Depending on the number of IAF, pregnant women divided into 3 groups: 1-group 5-4 cm, 2-group 3.9-2.1 cm, 3-groups 2-1 cm and less this is the main group. The analysis of the work consisted in comparing 2 groups of women with moderate and severe oligohydramnios. In the course of the study of pregnancy during the surveyed women, it was established that from 222 labors, mild oligohydramnios occurred in 171 (77%), moderate 29 (12.2%), severe in 24 (10.8%) pregnant women.

The main group consisted of 24 pregnant women with severe oligohydramnios. The control group included 29 pregnant women with oligohydramnios of moderate severity.

The amount of water was determined by P.F. Chamberlain (ultrasonic measurement of the height of the free water "pocket") and J.P. Phelani (calculation of the amniotic fluid index by summing the height of the water column in 4 quadrants of the uterus) [14]. For all newborns evaluated their physical development. The perinatal state of the newborn was determined on the basis of Apgar's score at birth.

Access to the history of childbirth was agreed with the leadership of the medical institution.

The formation of a database of research and calculation of statistical indicators has been produced with the help of a licensed program SPSS 20.0 (IBM Ireland Product Distribution Limited, Ireland). For the statistical results using Student's T-test.

Results and discussion.

Pregnant women of the studied groups did not significantly differ in age. Age surveyed ranged from 18 to 44 years. Among surveyed in the main group, pregnant women over 30 years old made up 12 (50%), these women had an additional risk factor by age. When studying medical records, both groups did not undergo pregravid preparation before pregnancy.

In the study of anamnesis and complications during pregnancy found that acute respiratory, infectious disease during pregnancy in the main group is 5(20.8%), in the control group – 4(10.3%). Gestational diabetes mellitus during pregnancy was diagnosed in the main group of

1(4.1%), in the control group 5(17.2%). Pre-eclampsia was complicated by labor in the main group 9(37.5%), and 5(17.2%) in the control group. In the study of somatic anamnesis, there is a high frequency of anemia of any degree in the main group 9(37.5%), in the control group 7(24.1%), a violation of fat metabolism in the main group 3 (10.3%), in the control group 3 (12.5%). 7 (29.1%) of the main group had in anamnesis abortions and miscarriages, and in the control group 7 (24.1%). In the main group, most frequently occurred extragenital diseases: urinary system diseases (chronic pyelonephritis, urolithiasis) -8(25%),

cardiovascular diseases (hypertension, vegetovascular dystonia, varicose disease of the lower extremities) - 9(37.5%).

The fact of oligohydramnios was confirmed in all women of the main group by means of ultrasound examination, except oligohydramnios, assessed the fetus condition during pregnancy: the presence of fetal malformations, low fetus weight for gestational age, fetal developmental delay syndrome, impaired fetal-placental blood flow, the percentages are shown in diagram 1.

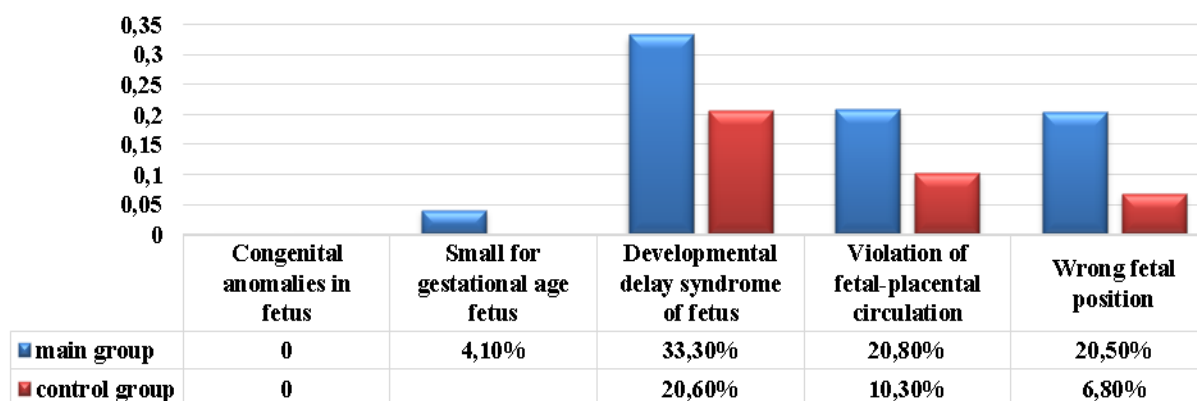


Diagram 1. Assessment of fetal condition during pregnancy by ultrasound diagnosis.

There is a large percentage of prenatal complications at severe oligohydramnios, associated with the fetus. Violation of fetal-placental circulation in the main group is 5(20,8%), in the control group – 4(10,3%). Developmental delay syndrome of fetus in the main group is 8(33,3%), while in control group – 6(20,6%). Small for gestational age fetus in the main group – 1(4,1%), in control group isn't noted. During the evaluation of fetal condition in the main group, small for gestational age fetus composed 1(4,1%). In this group, 5(20,5%) of women during pregnancy were diagnosed with pelvic presentation of the fetus, which may be explained by the restriction of the intrauterine space, as well as by a decrease in the motor activity of the fetus during hypoxia. In 15,4% of cases, the pelvic presentation of the fetus was preserved until delivery. An increase in the frequency of fetal growth retardation syndrome was noted in 8(33,2%) of the main group, and 5(20,6%) in the control

group. In the main group more often observed violation of the fetal-placental blood flow, which composed 5(20,8%), in the control group is 4(0,3%).

In the intranatal period, the fetal condition was assessed according to cardiotocography, signs of fetal suffering (rhythm monotony, decrease in the number and amplitude of accelerations, appearance of decelerations, decrease in heart rate variability, doubtful or reactive nonstress test) and the output of meconium into the amniotic fluid. In the intranatal period were noted such complications as: passage of meconium into the amniotic fluid in the main group - 2 (8,3%) and in the control group - 1 (3,4%); life-threatening conditions of fetus according to cardiotocography assessment - 12 (50%) in the main group and 6 (20,6%) in the control group, respectively; weakness of labor activity was observed in women with severe oligohydramnios 1 (2,4%). Tab. 1.

Table 1.

Complications of the intranatal period.

Comparative groups	Main group n - 24		Control group n - 29	
	Abs	%	Abs	%
Meconium passage into the amniotic fluid	2	8,3%	1	3,4%
Life-threatening condition of fetus according to CTG assessment	12	50%	6	20,6%
Weakness of labor activity	1	2,4%	0	0

Next, we compared pregnant women with severe oligohydramnios. In diagram 2, it is shown by which method they were more often delivered. Indications for emergency caesarean section were the threatening conditions of the fetus, decompensated form of placental insufficiency, weakness of labor. Indications for a planned caesarean section were determined exclusively in each case,

depending on the clinical situation, and more often were combined: pelvic presentation, fetal growth retardation syndrome. In oligohydramnios, the number of operative labor is 2 times higher. In the main group, vaginal delivery in - 13 (54%), operative delivery in - 11 (46%). The control group had 12 (41%) births through the birth canal, operative delivery in 17 (59%).

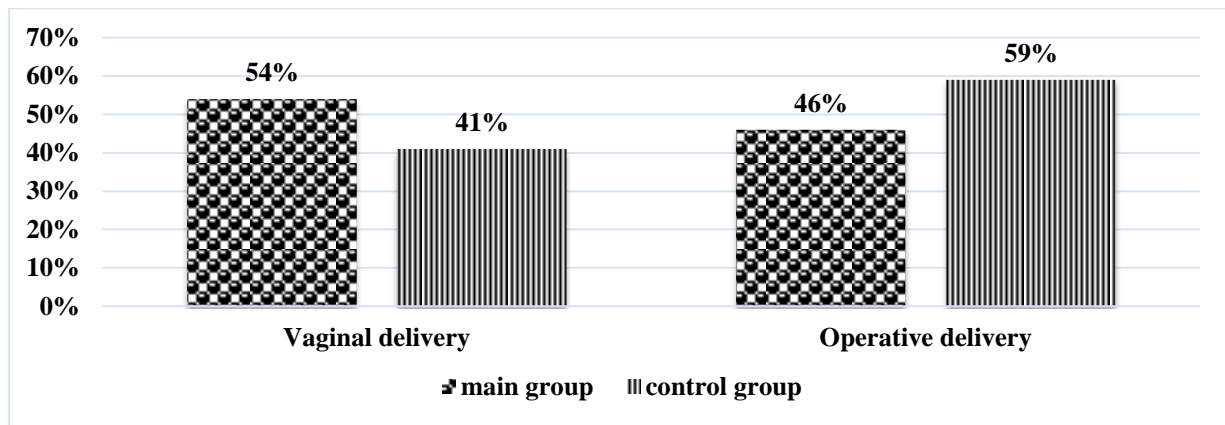


Diagram 2. Method of delivery.

Oligohydramnios was often diagnosed at 3rd screenings or after 28 weeks of pregnancy, if there were complaints on disturbed fetal movement according to recommendation of obstetrician-gynecologists. The study of the term of delivery showed a high incidence of preterm

birth up to 33.6 weeks in the main group - 6(25%), in the control group - 4(13.3%). From 34 to 36.6 weeks, in the main group - 8(33.3%), and the control group - 3(10.6%). In term, the birth in the main group - 10(41.7%), in the control group - 22 (76%).

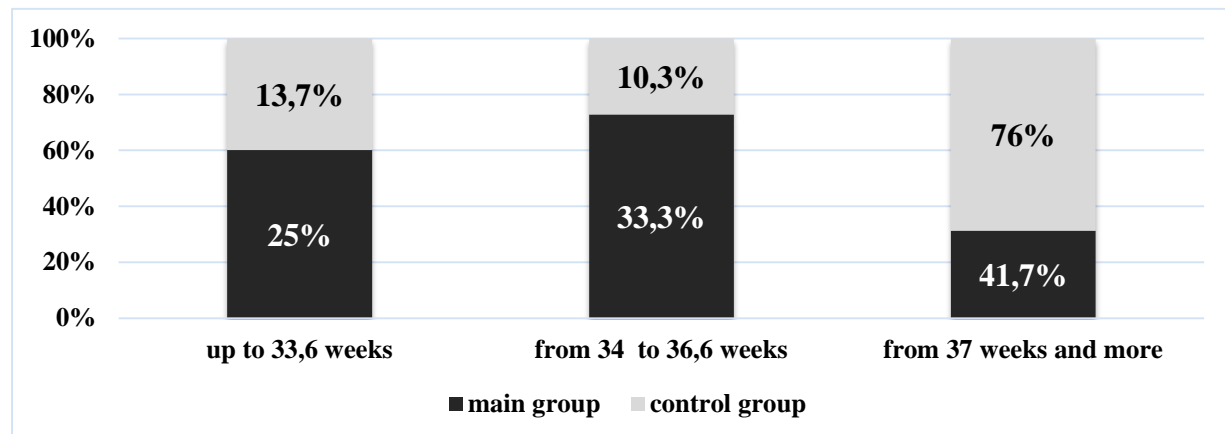


Diagram 3. Term of delivery.

The perinatal outcomes of our analysis were rated on the Apgar scale: up to 5 points, in the main group – 5(20.8%), and to the control group – 2(6.8%), up to 7 points, in the main group is 10(41.6%) and in the control group – 3(10.3%); and more than 7 points 9(37.6%) in main group and in the control group is 24(82.9%). This fact again shows that severe oligohydramnios affects the condition of the newborn. Table 2. All newborns who born in serious condition were transferred to the neonatal intensive care unit.

Table 2.

Assessment of the condition of the newborn on the Apgar scale.

Apgar score	Main group n 24		Control group n 29	
	Abs	%	Abs	%
up to 5 points	5	20,8%	2	6,8%
up to 7 points	10	41,6%	3	10,3%
7 and more	9	37,6%	24	82,9%

Conclusions:

1. Thus, in pregnant women with oligohydramnios significantly more frequent found anemia, severe pre-eclampsia, diseases of the circulatory system, past infectious diseases, miscarriage, abortion in anamnesis.
2. In severe oligohydramnios a significant frequency violation of fetal-placental circulation is 5(20.8%), developmental delay syndrome of fetus is 8(33.3%), and small for gestational age fetus is 1(4.10%).
3. In severe oligohydramnios often preterm delivery before 33 weeks 6 days is 6(25%), and up to 36.6 weeks – 8(33.3%).
4. On the background of severe oligohydramnios, very significant perinatal complications of the newborn: severe degree of newborn asphyxia 6(25%).

Conflict of interest: In conducting the study and writing of articles by the authors there is no conflict of interest.

The authors assure that no part of this work has not been published in other publications.

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Контактная информация:

Акылжанова Жансулу Егизбаевна – и.о. доцента кафедры неотложной медицины НАО «Медицинский университет Семей», Павлодарский филиал, г. Павлодар, Республика Казахстан.

Почтовый адрес: 0714002, Республика Казахстан, г. Павлодар, улица Торайгырова 72/1.

E-mail: Akilshanova@mail.ru

Телефон: +7 (701)4998464