American Journal of Interdisciplinary Research and Development
ISSN Online: 2771-8948
Website: www.ajird.journalspark.org
Volume 09, Oct., 2022

ANALYSING THE OUTCOME OF BIRTH IN WOMEN WITH MULTIPLE PREGNANCY COMPLICATED BY TWIN-TO-TWIN TRANSFUSION SYNDROME

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Abstract
A multiple pregnancy which is two or more fetuses develop in the uterus. A multiple pregnancy is associated with a significant number of complications, one of which is the feto- fetal transfusion syndrome. Relevance: feto- fetal transfusion syndrome is accompanied by high perinatal mortality and morbidity, the number of cases of which ranges from 56 to 100%. Objective: to evaluate the perinatal outcomes of multiple pregnancies complicated by feto- fetal transfusion syndrome. Materials and methods: the analysis of the course of pregnancy and the outcome of childbirth in women with multiple pregnancies complicated by feto - fetal transfusion syndrome and uncomplicated twins was carried out. Results: during the study period, 1350 births occurred on the basis of the maternity hospital, of which 55 births were twins (4%). Among them, in 3 multiparous multiparous with multiple monochorionic biamniotic pregnancy, a complication was observed as feto-fetal transfusion syndrome, which is 5% of twins. All 3 pregnancies were complicated by antenatal death of the first fetus and premature birth. Conclusions: according to the study, multiple pregnancy complicated by feto-fetal transfusion syndrome is associated with a high risk of antenatal fetal death.

Keywords: multiple pregnancy, chorionicity, feto-fetal transfusion syndrome, donor, recipient, preterm birth.

Introduction

A multiple pregnancy which is two or more fetuses develop simultaneously in the uterus. Recently, there has been an obvious trend towards an develope in the incidence of such pregnancies due to the active use of assisted reproduction technologies, including in vitro fertilization [1,2]. Children born in multiple pregnancies are called twins. There are two main types of twins: monozygotic (identical, homologous, identical, similar) and dizygotic (fraternal, heterologous and different). With fraternal twins, two placentas are always formed, which can be very close, even touching, but they can always be separated. Two spaces (i.e., fetal bladders or two "houses") are separated from each other by a septum consisting of two chorionic and two amniotic membranes. dichorionic diamniotic pregnancy. Monozygotic (identical) twins are formed as a result of the separation of one fetal egg at various stages of its development. The birth rate of monozygotic twins is 3-5 per 1000 births [2,3]. The division of a fertilized egg into two equal parts can occur as a result of delayed implantation and oxygen deficiency, as well as due to a violation of the acidity and ionic composition of the environment, exposure to toxic and other factors. The emergence of monozygotic twins is also associated with the fertilization of an egg that had two or more nuclei. If the separation of the fetal egg occurs in the first 3 days after fertilization, then monozygotic twins have two placentas and two amniotic cavities, and are called monozygotic diamniotic dichoriones. If the division of the ovum occurs between 4 - 8 days after fertilization, then two embryos will form, each in Monoamniotic twins. Two amniotic sacs will be surrounded by a common chorionic membrane with one placenta for two. Such twins are called monozygotic diamniotic monochorionic pregnancy. If separation occurs on the 9th - 10th day after fertilization, then two embryos are formed with a common amniotic sac and placenta. Such twins are called monozygotic MCMA. If the egg is separated at a later date, on the 13th - 15th day after conception, the separation will be incomplete, which will lead to the appearance of conjoined (undivided, Siamese) twins. This type is quite rare [1,2].

Definition of fetofetal transfusion syndrome

Multiple pregnancy is associated with a significant number of complications. One of them is twin –to -twin transfusion syndrome. Feto-fetal transfusion syndrome is a severe complication of multiple monochorionic pregnancy associated with the presence of transplacental vascular communications and circulatory imbalance between the intraplacental vascular beds of twin fetuses. In the presence of large vascular anomalies in the placenta, hemodynamic relations between the fetus-donor and fetus-recipient are formed between the fetuses with a disproportion in the volume of circulating blood. Due to unbalanced blood transfusion, the donor fetus develops hypovolemia and anemia against the background of growth retardation. A critical decrease in circulating blood volume is accompanied by progressive oligo- and anuria,

severe oligohydramnios, which prevents the normal maturation of the lung tissue, and a high probability of antenatal fetal death. In the recipient fetus, as a result of circulatory disproportion, the volume of circulating blood increases sharply, polycythemia develops, and hypertrophic cardiomegaly forms. Against the background of hemodynamic decompensation, congestive heart failure develops. An increase in renal blood flow and an increase in urine production lead to an increase in the volume of amniotic fluid as a factor in an increased risk of premature rupture of the membranes and induction of preterm labor [3,5] .

Relevance

Despite the introduction of modern methods of diagnosis and treatment into medical practice, feto- fetal transfusion syndrome is accompanied by high perinatal mortality and morbidity, the number of cases of which ranges from 56 to 100% and depends on the gestational age and severity of hemodynamic disorders [7-9]. According to L. Lewi etc., feto-fetal blood transfusion syndrome is one of the most common causes of losses in monochorionic pregnancy, especially before 24 weeks of gestation. The increasing of feto- fetal transfusion syndrome before 26 weeks of gestation is associated with an extremely high risk of perinatal death. In many cases, pregnancy ends either in miscarriage or premature birth due to polyhydramnios and uterine distension or intrauterine fetal death associated with severe cardiovascular disorders [5-11] .

Objective:

To evaluate the perinatal outcomes of multiple pregnancy complicated by twin-to-twin transfusion syndrome.

Materials and Methods

An analysis was made of the course of pregnancy and the outcome of childbirth in women with multiple pregnancies complicated by feto- fetal transfusion syndrome and uncomplicated twins at the Tashkent Regional Perinatal Center in Chirchik for the period from 1.07.2022 to 1.10.2022. The analysis was carried out taking into account the following criteria: the age of the pregnant woman, the method of pregnancy, the term of delivery, the method of delivery, the course and complications of childbirth, the position of the fetus and the height and weight indicators of newborns, the assessment of newborns on the Apgar scale.

Results

On the basis of the Tashkent Regional Perinatal Center for a period of 3 months, 1350 births occurred. Of these, 55 births were twins, which is 4% of the total number of births. Monochorionic twins were 16 pregnancies, which is 29% of the total number of multiple pregnancies, of which monochorionic monoamniotic - 5 pregnancies, which

is 9%, and monochorionic biamniotic - 11 pregnancies, respectively 20%. Therefore, bichorionic biamniotic twins - 39 pregnancies, which is 71% of the total number of multiple pregnancies. According to the results of the study, it was revealed that the sociological portrait of pregnant women with multiple pregnancies (twins) is represented by women mainly at the age of 28, primigravida, primiparous, repregnant, multiparous. Among primiparous primiparous women with multiple pregnancies, the age range ranges from 19 to 30 years, which is 30% of the total number of women with multiple pregnancies, among them, multiple pregnancies with bichorionic biamniotic placentation prevail in women aged 19 to 22 years, and pregnancy with monochorionic monoamniotic and monochorionic biamniotic placentation, respectively, from 22 to 25 years and from 25 to 30 years. Multipregnant nulliparous women aged 24 to 35 years, accounting for 14% of the total number of multiple pregnancies. Multiparous multiparous were aged from 28 to 40 years, respectively 54%. Multiple pregnancy was more often complicated by premature birth, which is 82% of cases. Preterm birth with twins occurred at an average of 34 weeks. Among pregnancies with monochorionic monoamniotic placentation, childbirth was at 28 to 35 weeks (44%), monochorionic biamniotic - at 31 to 36 weeks (27%). With bichorionic biamniotic preterm birth was observed more often in terms of 34 to 36 weeks of pregnancy (29%). The delivery of the studied women with multiple pregnancies was both spontaneous and by caesarean section. Spontaneous births were observed in multipregnant multiparous women with bichorionic biamniotic placentation in the period from 27 to 33 weeks of gestation (18.2% of cases). Delivery by caesarean section was noted in 81.8%. The frequency of operations on an emergency basis prevailed over the rates of planned delivery and amounted to 34.8%. With monochorionic monoamniotic multiple pregnancy, operative delivery was noted in 9% of cases, with monochorionic biamniotic - in 16%, with bichorial biamniotic - in 57% of cases. The frequency of operative delivery is explained by the expansion of indications from the fetus and mother. When conducting labor through the natural birth canal (18.2%), a high percentage of complications of the birth act was observed. At the moment , premature discharge of water (60% of cases), weakness of labor activity (19%) and bleeding in the postpartum and early postpartum periods (23%), severe preeclampsia (32%) were noted in the first place among obstetric complications. The state of newborns, the Apgar score ranges from 1-3 points to 8-9 points, depending on the term of delivery, methods of delivery and type of placentation (chorionicity). Newborns with an Apgar score of 1-3 points were in 3% of cases, with delivery terms from 24 to 28 weeks, 6-7 points were in 19% of cases of childbirth, with delivery terms from 27 to 33 weeks, 7-8 points - 74%, with terms of delivery from 32 to 36 weeks, 8-9 points - in 4% of cases of childbirth, with terms of delivery from 36 to 39 weeks of gestation.

Of the 55 cases of multiple pregnancies (100%) in 3 pregnant women (5%), the pregnancy was complicated by the development of twin-to-twin transfusion

syndrome. According to the research, all 3 pregnancies were monochorionic biamniotic multiple pregnancies in multiparous and multiparous women. During pregnancy, according to the birth histories, it was revealed that they were provided with conservative therapy aimed at improving blood circulation in the uterine-fetal-placental bed and intrauterine invasive interventions, such as amnioreduction, septotomy, and laser coagulation of anastomoses, were not performed. In all 3 cases, pregnancy was complicated by antenatal death of the first fetus and premature birth. Firstfull, the pregnancy was terminated by caesarean section at 28 weeks. 2 fetuses were extracted, 1 dead, weighing 715 g, 2 live, weighing 1120 g, with an Apgar score of 6-7 points and transferred to the neonatal intensive care unit. In the second case, the pregnancy was terminated by a caesarean section in the sap at 31 weeks. 2 fetuses were extracted, 1 dead, weighing 800 g, 2 live, weighing 1500 g, with an Apgar score of 6-7 points, transferred to the neonatal intensive care unit. In the third case, the pregnancy was terminated by caesarean section at 27 weeks. Extracted 2 fetuses, both alive. 1 fetus weighing 960 g, with an Apgar score of 3-4 points, 2 fetus weighing 1050 g, with an Apgar score of 6-7 points.

Conclusions

To sum up, multiple monochorionic pregnancy is still one of the most complex and controversial pathologies in obstetrics and neonatology. Monochorionic twins complicated by fetofetal transfusion syndrome are associated with a high risk of antenatal fetal death, as well as neonatal morbidity and mortality. According to the study, conservative therapy during pregnancy with developed fetofetal transfusion syndrome does not improve the course of pregnancy and perinatal outcomes. Intrauterine invasive interventions, if applied in the above pregnancies, could help prolong pregnancy, improve perinatal outcomes in fetofetal transfusion syndrome. syndrome. As recommendations for diagnosis, the following ultrasound criteria can be distinguished: the presence of monochorionicity (can be determined from the 4th week when using a transvaginal probe) and the maximum free pocket of amniotic fluid of one fetus is less than 2.0 cm and more than 8.0 cm of the second fetus [7].

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