Özgün Araştırma / Original Article

Jinekoloji - Obstetrik ve Neonatoloji Tıp Dergisi
The Journal of Gynecology - Obstetrics and Neonatology

DOI: 10.38136/jgon.1094804

Son Dört Yılda Üçüncü Basamak Hastanemizde Doğumu Gerçekleşen İkiz Gebelik Sonuçlarının Değerlendirilmesi

Evaluation of Multiple Pregnancies Who Delivered During The Last Four Years In Our Tertiary Hospital

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ÖZ

Amaç: Tersiyer bir merkez olan hastanemizin Ocak 2016-Aralık 2020 tarihleri arasındaki ikiz gebeliklerin sonuçlarını değerlendirmeyi amaçladık.

Gereçler ve Yöntem: Muğla Üniversitesi Eğitim ve Araştırma Hastanesi Kadın Hastalıkları ve Doğum Kliniği'nde Ocak 2016-Aralık 2020 tarihleri arasında doğumu gerçekleşen 6567 gebe arasından 107 çoğul gebelik çalışmaya dahil edildi. Retrospektif olarak değerlendirilen bu gebelerin 106'sı ikiz, 1'i üçüz gebelik idi.

Bulgular: İkiz gebeliklerin 87'si (%82.07) diamniyotik-dikoryonik, 11'i (%10.37) dikoryonik-monoamniyotik, 8'i (%7.54) monokoryonik-monoamniyotik olduğu saptanmıştır. Doğumların 76'sı (%71.69) preterm doğum ile gerçekleşmiş olup 30 (%28.3) gebenin doğumu miadında gerçekleşmiştir. İkiz gebeliklerin 12 (%11.1)'si normal doğum, 96 (%88.9)'sı sezaryen ile doğumunu gerçekleştirmiştir. Sezaryen ve vajinal doğum grubu kendi arasında karşılaştırıldığında kan kaybı açısından istatistiksel olarak fark izlenmemiştir. Hospitalizasyon süresi açısından karşılaştırıldığında ise vajinal doğum grubunda hospitalizasyon süresinin daha kısa olduğu saptanmıştır.

Sonuç: Çalışmamızın klinik sonuçları güncel literatür ile benzerlik göstermektedir. Çalışmamızda, literatür bilgisinden farklı olarak değerlendirdiğimiz sezaryen ve vajinal doğum arasında kan kaybı ve hospitalizasyon süresidir. Sezaryen ile vajinal doğum arasından kan kaybı açısından fark izlenmemiş olup vajinal doğum yapan hastaların hospitalizasyon süresinin daha kısa olduğu izlenmiştir.

Anahtar Kelimeler: İkiz gebelik, Çoğul gebelik, Sezaryen, Koryonisite, Amniyonisite

ABSTRACT

Aim: We aimed to evaluate the outcomes of twin pregnancies between January 2016 and December 2020 in our hospital, which is a tertiary center.

Materials and Methods: 107 multiple pregnancies were included in the study among 6567 pregnant women who were delivered between January 2016 and December 2020 in Muğla University Training and Research Hospital Obstetrics and Gynecology Clinic. Of these retrospectively evaluated pregnant women, 106 were twins and 1 was triplet.

Results: It was determined that 87 (82.07%) twin pregnancies were diamniotic-dichorionic, 11 (10.37%) were dichorionic-monoamniotic, and 8 (7.54%) were monochorionic-monoamniotic, respectively. 76 (71.69%) of the deliveries were with preterm delivery and 30 (28.3%) of the pregnant women were delivered at term. Twelve (11.1%) twin pregnancies were delivered by vaginal delivery, and 96 (88.9%) by cesarean section (C/S). No statistical difference was observed in terms of blood loss when the C/S and vaginal delivery groups were compared. When compared in terms of hospitalization time, it was found that the hospitalization period was shorter in the vaginal delivery group.

Conclusion: The clinical results of our study are similar to the current literature. In our study, what we evaluated differently from the literature is blood loss and hospitalization time between C/S and vaginal delivery. There was no difference between C/S and vaginal delivery in terms of blood loss, and it was observed that the hospitalization period of patients who had vaginal delivery was shorter.

Keywords: Twin pregnancy, multiple pregnancy, cesarean section, chorionicity, amnionicity

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Başvuru tarihi :28/03/2022
Kabul tarihi : 22/08/2022

INTRODUCTION

Multiple pregnancy occurs when more than one oocyte is fertilized at the same time or when a single oocyte and sperm are fertilized and then divided to form separate embryos. In recent years, its frequency has increased due to the introduction of assisted reproductive techniques (ART) into our lives and the postponement of gestational age in industrial societies (1). There is different data about its frequency in the literature. It varies according to factors such as ethnic origin, genetic structure, familial tendency, gestational age, ART, and it is reported to be between 1-4% (2, 3).

Adverse maternal outcomes may be encountered in multiple pregnancies. Hemorrhagic problems such as placental abruption, uterine rupture, postpartum atony and bleeding; hypertensive disorders such as gestational hypertension, preeclampsia, eclampsia, HELLP syndrome; systemic problems such as endometritis, septic shock, respiratory failure, and shock may occur (3).

Another important issue for obstetricians and parents in multiple pregnancies is fetal and neonatal morbidity and mortality. Chorionicity and amnionicity are the most important predictors of prognosis (4). Mortality and morbidity due to preterm birth is one of the most important issues (5). Neonatal mortality-morbidity increases due to reasons such as intrauterine growth retardation, increased risk of intrauterine loss, placental abruption, premature rupture of membranes (6).

In this study, we will evaluate the maternal and neonatal outcomes of multiple pregnancies delivered in our clinic.

MATERIAL AND METHOD

In this retrospective study, 106 twin pregnancies and 1 triplet pregnancy among 6567 who gave birth in Muğla University Training and Research Hospital Obstetrics and Gynecology Clinic between January 2016 and December 2020 were included in the study. The study was approved by the Clinical Research Ethics Committee of the Muğla Sıtkı Koçman University (28.09.2021, 220). We conducted this study consistent with the Declaration of Helsinki Ethical Principles. The file records were analyzed by examining maternal age, week of birth, parity gravida numbers, chorionicity-amnionicity, type of delivery, changes in pre- and post-partum hemoglobin values and hemoglobin amount, number of hospital stay, pregnancy-related complications, APGAR scores of fetuses (1st , 5th minute). Maternal age was onsidered as the age completed at the time of birth. Gestational week was calculated by confirming with first trimester ultrasonography (USG). Hemoglobin values were studied on a Sysmex XN-1000 blood counter (Sysmex, Kobe, Japan). APGAR scores of the fetuses were evaluated by the pediatrician in the delivery room during delivery. The 1st, 5th minute APGAR score was considered to be the base. The number of nights spent in the hospital was taken as a basis for the calculation of the number of days spent in the hospital. Past USG records were examined in the determination of chorionicity-amnionicity.

Statistical Analysis

The data were analyzed using the Statistical Package for Social Sciences 22.0 for Windows (SPSS Inc., Chicago, IL). Summary statistics were expressed as mean±standard deviation, minimum, maximum, percentages, and frequencies. The normality of distribution for the quantitative data was evaluated using the Shapiro Wilk test. Mann–Whitney U-test were applied to non-normally distributed data. Differences in hemoglobin values between pre-partum and post-partum were analyzed using the Wilcoxon Signed Ranks Test. All differences with a p value of 0.05 or less were considered statistically significant.

RESULTS

107 multiple pregnancies were delivered during the dates of the study. Of these, 106 (99.06%) were twins and 1 (0.93%) were triplets. It was determined that 87 (82.07%) twin pregnancies were diamniotic-dichorionic, 11 (10.37%) were dichorionic-monoamniotic, and 8 (7.54%) were monochorionic-monoamniotic, respectively. 76 (71.69%) pregnant women were delivered with preterm delivery, and 30 (28.3%) pregnant women were delivered at term in the evaluation made in terms of weeks of delivery. 12 (11.1%) of the twin pregnancies were delivered by vaginal delivery, and 96 were (88.9%) by cesarean section (C/S). Demographic data of the study group are given in Table 1.

Table-1: Demographic characteristics of study group

	MeanSD	Min	Max
Age (year)	29.6	15.0	41.0
Gravida (n)	2.4	1.0	5.0
Parity (n)	1.0	0.0	5.0
Birth week (n)	35.1	31.0	38.0
Pre-partum Hgb (g/dL)	10.9	8.4	13.8
Post-partum Hgb (g/dL)	9.74	6.50	13.0
Hgb Change (g/dL)	1.2	0.1	3.6
APGAR Fetus 1 (n)	8.5	6.0	10.0
APGAR Fetus 2 (n)	9.1	7.0	10
Hospital Stay (days)	3.3	2.0	8.0

Of 96 deliveries by C/S, 26 (27.1%) were delivered by elective C/S and 70 (72.9%) by emergency C/S. Among the indication for C/S, the most common reason was previous C/S with 42 (43.8%) pregnant women. 54 (56.3%) pregnant women delivered by primary C/S. The most common primary C/S reason was found to be non-vertex presentation of the first fetus in 38 pregnant women and maternal desire in 6 pregnant women. Preterm labor was found to be the most common cause of C/S 40 (57.14%) in pregnant women who delivered by emergency C/S. 8 (50%) of the twin pregnancies who had vaginal delivery had preterm delivery and 8 (50%) had term delivery.

The presentation patterns of 106 pregnant women who were pregnant with twins and gave birth are presented in Table-2.

Table-2: Presentation patterns of twin pregnancies

	Vertex presentation n (%)	Breech Presentation n (%)	Foot presentation n (%)	Transverse presentation n (%)
1.fetus	58 (%60.4)	30 (%31.3)	2 (%2.1)	6 (%6.3)
2.fetus	44 (%45.8)	30 (%31.3)	18 (%18.8)	4 (%4.2)

All 12 patients who had vaginal delivery were in vertex-vertex presentation. Induction was applied to 2 of these pregnants (16.66%) for medical reasons. All of the other 10 (83.33%) pregnant women applied after the onset of labor.

Demographic data and delivery results of all groups are given in Table-3.

Table-3: Demographic data and delivery results of patients

	C/S (n=96)	Vaginal delivery (n=12)	p value
Age (year)	29.5±5.0	31.2±5.3	0.274
Gravida (n)	2.3±1.1	2.5±1.0	0.627
Parite (n)	1.0±1.0	1.3±0.8	0.271
Birth week (n)	35.1±2.0	35.2±1.5	0.946
Pre-partum Hgb (g/dL)	10.9±1.41	11.63±1.15	0.088
Post-partum Hgb (g/dL)	9.74±1.47	10.2±0.84	0.525
Hgb Change (g/dL)	1.2±0.9	1.6±0.9	0.088
APGAR Fetus 1 (n)	8.5±0.7	8.7±0.5	0.492
APGAR Fetus 2 (n)	9.1±1.7	8.3±0.8	0.144
Hospital Stay (day)	3.3±1.1	2.5±0.5	0.021

Summary statistics are given as the mean ± standart deviation. Hgb: Hemoglobin

DISCUSIION

106 pregnant twins were born in our clinic, and the total number of births is 6567 between January 2016 and December 2020. In this case, it is seen that the twin pregnancy rate is 1.61%. Although this rate varies between 1.2-4% in the literature, the results of our clinic are compatible with the current literature. This rate increases with the frequent use of ART and the increase in advanced maternal age (AMA) pregnancies compared to previous years and will continue to increase in the coming years.

In multiple pregnancies; hypertension, preeclampsia and GDM are observed more frequently than singleton pregnancies (7, 8). In our study, hypertension-preeclampsia was found in 20 cases (18.69%) and GDM in 15 cases (14.01%). Pregnancy-related hypertensive diseases were found at a rate of 16.4% in the study conducted by Gül et al. (9). In the study conducted by Schwartz et al., the frequency of GDM was found to be 7.7% (10). The reason for these high rates in our study is that our hospital is a tertiary center and it is the only neonatal intensive care unit in our city.

Chorionicity and amnionicity are one of the most important predictors of prognosis in multiple pregnancies. Neonatal outcomes in diamniotic and dichorionic twins are positive compared to others (11). In the study conducted by Hayes-Ryan et al, diamniotic-dichorionic pregnancy was found with a rate of 81.2% (12). In the study of Machado et al., 73.3% of the pregnant women were found to be dichorionic. (13). This rate was found to be 80.18% in our study.

One of the most common cases in multiple pregnancies is preterm birth. Multiple pregnancies account for 10-12% of preterm births worldwide (14). Preterm birth and chorionicity are the most important markers for the prognosis of fetuses. In the study performed by Qazi et al., it was determined that the mean delivery week of twin pregnancies was 35 weeks and the frequency of preterm delivery was 31.2% (15). The frequency of preterm birth was found to be 42% in the study conducted by Kurdi et al., and 8% of these patients were treated with cervical cerclage and 11% with betamemetics (16). In our country, Artunç Ülkümen et al. found that 95.2% of the cases gave birth before 37 weeks of gestation and the mean week of delivery was found to be 33.43±6.02 (17). In the study of Gul et al., this rate was found to be 58.9%. (9). In our study, the mean week of delivery was found to be 35.1±2.0, and the frequency of preterm delivery was 71.69%.

In recent years, the increasing C/S rates all over the world, especially in our country, are met with concern (18). The perception of valuable baby in pregnancies resulting from AMA and ART, which are the main etiological causes of multiple pregnancies, increases this rate even more. In the study conducted by Hayes-Ryan et al., the delivery method of 3132 multiple pregnant women was examined (12). In this study, 66.8% of the deliveries were performed by C/S. C/S was performed at a rate of 53.3% in the study performed by Qazi et al. (15). In another study conducted by Gul et al. in our country, this rate was 42.6% (16). In the same study, after the first baby was delivered by vaginal delivery in 5.4% of pregnant women, the second baby was delivered by C/S for various reasons. In our study, 88.9% of deliveries were performed by C/S. The most common cause of C/S is previous C/S with 43.8%. We think that the high rate of C/S in our clinic is due to the high number of pregnant women who had a previous C/S and the high number of complicated cases because our clinic is a tertiary center.

One of the important indicators in determining the mode of delivery in multiple pregnancies is the presentation of the fetuses. Vertex presentation of the first fetus is an important indicator for vaginal delivery (19). In the study of Gul et al., it was determined that 38.3% of the fetuses were vertex-vertex presentation and 26.77% of them were vertex-breech (9). As we mentioned before, the frequency of C/S in this study was 42.6%. In the study conducted by Qazi et al., it was determined as vertex-vertex (51%) followed by vertex-breech (24%), breech-vertex (15%) and breech-breech (10%) (14). In our study, it was found that the first fetus was in vertex presentation with a rate of 60.4%.

Another important issue for determining the prognosis after the week of birth and chorionicity is the 1st and 5th minute APGAR scores. The cut-off value for evaluation is accepted as <7 in the literature. It was determined as 11.7% in the 1st minute APGAR score evaluation of <7 in the study of Hayes-Ryan et al. In the same study, it was determined as 2.9% in the 5th minute APGAR score evaluation (12). In our country, in the study of Gül et al., it was determined that the APGAR score of the fetus was <7 with a rate of 41.2% (9). In our study, this rate was found to be 4.71%. When the whole study group was evaluated, the mean APGAR score at the 1st minute was 8.53±0.68 for first-born fetuses and 9.00±1.67 for second-born fetuses. When we compared the vaginal delivery and C/S groups in our study, no statistically significant difference was observed between the 1st minute APGAR scores (p=0.482), and a sta-

tistically significant difference was observed between the 5th minute APGAR scores in favor of C/S (p=0.012).

Blood loss and the number of days in the hospital are important in terms of maternal outcomes and cost-effectiveness in the evaluation of multiple pregnancies. Unlike the general literature, it is among the subjects we evaluated in our study. The change in the amount of hemoglobin between pre-partum and post-partum period is important in terms of morbidity. Hemoglobin change was found to be 1.6±0.9 g/dL in patients who delivered vaginally, while it was 1.2±0.9 g/dL in patients who delivered by C/S. There was no statistically significant difference between the groups (p=0.088). In the evaluation made in terms of the number of days they stayed in the hospital, the hospitalization period of the patients who gave birth by vaginal delivery was found to be statistically significantly less (p=0.007). We think this is due to two reasons. We attribute to the hospitalization of the patients hospitalized for C/S to the hospital the night before pre-operatively and the long stay in the hospital post-operatively.

LIMITATIONS

The results of the pregnant women who gave birth in our clinic were examined, and the results of the pregnant women who experienced abortion in the early period or one of the twin partners lost in the early period were not evaluated in our study. In addition, data on whether multiple pregnancies occurred spontaneously or as a result of ART could not be reached.

CONCLUSION

Multiple pregnancy is a condition that has been increasing in frequency in recent years and its maternal and perinatal outcomes are negative compared to singleton pregnancies. Chorionicity-amnionicity and preterm birth are the most important predictors of prognosis. The frequency of pathologies such as hypertensive disorders of pregnancy, GDM and intrahepatic cholestasis of pregnancy has increased. The frequency of delivery by C/S has increased due to reasons such as presentation anomalies and preterm delivery. In our study, the hospitalization time was prolonged although intraoperative blood loss did not change due to cesarean section. In the management of multiple pregnancies, it should be managed together with gynecologist and obstetrician, perinatologist, neonatal intensive care specialist and specialists of the necessary departments.

Ethics Committee Approval: The study was approved by the Clinical Research Ethics Committee of the Muğla Sıtkı Koçman University (28.09.2021, 220).

Conflict of Interest: None declared by the authors.

Financial Disclosure: None declared by the authors.

Acknowledgements: None declared by the authors.

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