

Perinatal Outcome in Twin Pregnancy According to Chorionicity

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Abstract

Background: Multiple pregnancy is defined as pregnancy with 2 or more fetuses. It is termed as twins for 2 fetuses, triplets for 3 fetuses, Quadruplets for 4 fetuses, Quintuplets for 5 fetuses, Sextuplets for 6 fetuses and Septuplets for 7 fetuses and so on. The incidence of multiple pregnancies varies significantly. In several overview studies (since the early 1970) it was found that natural twinning rates were less than 8 twin births per 1000 births in East Asia and Oceania, 9-16 per 1000 births in Europe, USA and India and 17 and more per 1000 births in African countries.

Methods: This prospective observational study was conducted by the department of OBG at Sri muthukumaran medical college hospital and research institute, Shikkarayapuram, Chennai from December 2019 to May 2020.

Results: Primigravidas constituted for 43% of pregnancies and multigravidas constituted for 57% of pregnancies. The maximum cases 42 (42%) were in the age of 25-29 yrs followed by 31(31%) in the age group 21-24 years. The mean age of the patients was 26.87 (SD 9.67) years. The discordant growth constituted for 12% of pregnancies in both monochorionic and dichorionic twins where as it was absent in 88% of cases.

Keywords: Multiple pregnancy; Monochorionic twins; Dichorionic twins.

INTRODUCTION

Multiple pregnancy is defined as pregnancy with 2 or more fetuses. It is termed as twins

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for 2 fetuses, triplets for 3 fetuses, Quadruplets for 4 fetuses, Quintuplets for 5 fetuses, Sextuplets for 6 fetuses and Septuplets for 7 fetuses and so on. The incidence of multiple pregnancies varies significantly. In several overview studies (since the early 1970) it was found that natural twinning rates were less than 8 twin births per 1000 births in East Asia and Oceania, 9-16 per 1000 births in Europe, USA and India and 17 and more per 1000 births in African countries.¹⁻⁵ Smith et al. reported that India has twinning rates below 9 per 1000 births.⁶ Twins can be either monozygotic or dizygotic. Dizygotic twins or fraternal twins are formed due to fusion of two separate ova by two different sperms. The placenta is always dichorionic and diamniotic. Depending on the timing of splitting of fertilized egg, monozygotic

twins can be dichorionic or monochorionic. The incidence of twin pregnancy has been on rise recently due to advanced age of pregnancy and increasing use of assisted reproductive techniques. Low birth weight contributed by both prematurity and IUGR is the main factor responsible for higher perinatal mortality in twins. Major priorities in the management of twin gestations are early and accurate perinatal diagnosis, detection and management of maternal complications and fetal growth restriction. Hence this study is carried out to analyze the the perinatal morbidity and mortality in twin pregnancy with relation to chorionicity.

MATERIALS AND METHODS

This prospective observational study was conducted by the department of OBG at Sri muthukumaran medical college hospital and research institute, Shikkarayapuram, Chennai from December 2019 to May 2020. All cases of twin pregnancy who full filled the inclusion criteria were included in the study.

Inclusion Criteria

1. All cases of twin pregnancy attending to outpatient and emergency labour room during study period.

Exclusion Criteria

1. Singleton pregnant women
2. Twin pregnancy in first trimester

Procedure

The detailed history and proper clinical findings were entered in a proforma case sheet.

The clinical examination was done and necessary investigations were carried out. Chorionicity was assessed using ultrasound and placental examination.

STATISTICAL ANALYSIS

The data was analyzed using SPSS software version 16. Statistics method used are frequencies,

Contingency Table analysis and Chi-square test were used to interpret the results.

RESULTS

A total of 100 cases were included in this study at our hospital during the period of December 2019 to May 2020.

Table 1: Twin deliveries with relation to parity & chorionicity

Gravida	Monochorionic Twins	Dichorionic Twins	Percentage %
Primigravida	18	25	43
Multigravida	20	37	57
Total	38	62	100

Out of 100 subjects enrolled into the study, Primigravidas constituted for 43% of pregnancies

and multigravidas constituted for 57% of pregnancies.

Table 2: Twin deliveries with relation mothers age

Age (yrs)	Monochorionic Twins	Dichorionic Twins	Percentage %
<20 years	2	4	6
21 - 24 years	13	18	31
25 - 29 years	14	28	42
30 - 34 years	9	11	20
35 - 39 years	0	1	1
Total	38	62	100

Out of 100 subjects enrolled into the study, maximum cases 42 (42%) were in the age of 25 - 29 yrs followed by 31(31%) in the age group 21 - 24

years. The mean age of the patients was 26.87 (SD 9.67) years.

Table 3: Twin Deliveries with Relation to Discordant Growth

Discordant Growth	Monochorionic Twins	Dichorionic Twins	Total	Percentage
Present	8	4	12	12
Absent	30	58	88	88
Total	38	62	100	100

The discordant growth constituted for 12% of pregnancies in both monochorionic and dichorionic twins where as it was absent in 88% of cases. The

significance in difference between the two groups was analysed using the Fischer's test and was found significant with a P value of 0.0045

Table 4: Twin Deliveries with Relation to Neonatal Mortality

Discordant Growth	Monochorionic Twins	Dichorionic Twins	Total	Percentage
Present	8	5	13	13
Absent	30	57	87	87
Total	38	62	100	100

Neonatal mortality was found in 8 cases (8%) in Monochorionic where as neonatal mortality was seen in 5 cases (5%) of Dichorionic twins. The significance in

difference between the two groups was analysed using the Fischer's test and was found significant with a P value of 0.042.

Table 5: Twin Deliveries with Relation to Causes of Neonatal Mortality

Cause of death	Monochorionic Twins	Dichorionic Twins	Total	Percentage
Respiratory distress syndrome	4	2	6	46.2
Sepsis	1	1	2	15.4
Birth asphyxia	1	1	2	15.4
seizures	1	1	2	15.4
Necrotising enterocolitis	1	0	1	7.4
Total	8	5	13	100

The most common cause of neonatal mortality was RDS (46.2%) seen in 6 cases where as Birth asphyxia (15.4%) and sepsis (15.4%) were seen in one cases each in both monochorionic pregnancies and dichorionic pregnancies.

DISCUSSION

Primigravidas constituted for 43% of pregnancies and multigravidas constituted for 57% of pregnancies which was consistent with the study done by Su RN et al. who concluded that multiple pregnancy were common in multigravidaes and was significantly associated with older maternal age, caesarean delivery. The most common age being 25 to 29 years in both monochorionic and dichorionic pregnancies which was in accordance

with the study done by Aslam S et al. and Pant P et al. whose study age group was between 21 and 29 years and the most common reason being this age is more fertile. Discordant growth was analyzed and found in 66.7% in monochorionic pregnancies and around 33.3% in dichorionic pregnancies. The significance in difference between the two groups was analysed using the Fischer's test and was found significant with a P value of 0.0045 which was consistent with the study done by Domonigues et al. concluded that in dichorionic twins, there were around 30% discordant growth which was consistent with our study. Neonatal mortality was found in 8 cases (8%) in Monochorionic where as neonatal mortality was seen in 5 cases (5%) of Dichorionic twins. The significance in difference

between the two groups was analysed using the Fischer's test and was found significant with a P value of 0.042. which was consistent with the study done by Bellizzi S et al.¹ who concluded that the neonatal mortality among twins was significantly higher when compared to singleton neonates.

CONCLUSION

From this study, we can conclude that the incidence of maternal and fetal adverse outcome are increased significantly in twin pregnancies. Monochorionic pregnancies are at increased risk of developing various complications. It is highly advisable to determine the chorionicity at 11-14 weeks of gestation as each type of placentation carries different prognosis and morbidity.

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