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Gynecology

A STUDY OF MATERNAL AND PERINATAL OUTCOME IN TWIN GESTATION

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ABSTRACT **AIM -** to study the maternal and perinatal outcome of twin gestation.
METHODS-an observational study was conducted at basweshwar and sangmeshwar teaching and general hospital attached to Mahadevappa Rampure medical college,kalaburgi between april 2016- march 2017,including 50 cases of twin gestation>28weeks .
RESULTS-Of the 50 cases(0.71%)included, 42 (84.0%) cases belongs to Dichorionic diamiotic, mean maternal age 24.33±2.86 yrs.Most spontaneously conceived.Preterm labor, anaemia and hypertensive disorders were most frequently encountered maternal complications with no maternal deaths in the study. Most twin delivered at 36.57 ± 2.57 weeks. Higher rate of LSCS(59.2%) was seen.Prematurity and low birth weight were the main reasons for admission to NICU frequently. The overall perinatal mortality in this study 6.2%.
CONCLUSION- multifetal pregnancies are at high risk for both mother and fetuses and need early detection, regular antenatal care and a planned management for a better outcome.

KEYWORDS : twin pregnancy, perinatal outcome , chorioncity, assisted reproductive techniques.

INTRODUCTION

Multiple gestations are becoming a problem of increasing dimensions with the dramatic increase in numbers due to a trend towards late childbearing and the widespread use of assisted reproduction. The Worldwide incidence of multiple pregnancies varies considerably it is around 2 -20 per 1000 births. Highest in Sub-Saharan Africa, with an average twinning rate of 20 per 1,000 deliveries compared to 10 per 1,000 deliveries in Europe and around 5-6 per 1,000 deliveries in Asia. The number and rate of twin, triplet and higher order multiple births have also increased in India at an unprecedented pace over the past two decades due to improving infertility through ovulation induction and assisted reproductive techniques.

The various complications encountered in mothers are anaemia, hyperemesis, preterm labour, hypertensive disorders of pregnancy, antepartum haemorrhage, polyhydramnios, increased pressure symptoms, varicose veins and gestational diabetes. Low birth weight, contributed by prematurity, is the main factor responsible for higher perinatal mortality in twins. Major priorities in the management of twin gestations are early and accurate prenatal diagnosis, detection and management of maternal complications and foetal growth restriction. Planning the time and mode of delivery in complicated twin pregnancies and early detection of monochorionic placentation and managing its consequences are crucial steps leading to a higher probability of successful outcome.

METHODS

Source of data-

Study setting-observational study,Mahadevappa Rampure medical college ,

Kalaburgi

Study period- april 2016-march 2017

Inclusion criteria- 50 cases of twin gestation>28weeks delivered at BTGH and STGH.

Exclusion criteria-patients not consenting for study.

Method of data collection-

This observational study was conducted in the department of obstetrics and gynecology, MRMC,Kalaburgi between april 2016-march 2017.

The subjects selected for this study are women with twin gestation presenting to OPD or LABOR ROOM with >28 weeks of gestation.

The data related to maternal age, parity, maternal medical and obstetrical complications, ultrasonography for chorionicity, fetal viability, malformations, and presentation of both the fetuses was collected in the proforma.

The mode of delivery, intrapartum and postpartum complications, requirement of blood transfusion, neonatal outcome in terms of birth weight, APGAR score, NICU admissions and perinatal death was taken into account. Examination of placenta was done to confirm the chorionicity. Ante partum complicatios like hyperemesis gravidarum,hypertensive disorders,anemia,preterm labor,GDM, APH were studied. Details of both twins like ,birth weight, APGAR score, perinatal morbidity and mortality ,congenital anamolies was collected.

Statistical analysis –

Descriptive and infertential statistical analysis had been carried out in present study.

Results on continous measurements are presented on Mean±SD and results on categorical measurements are presented in Number(%) .

Pearson's chi square test, Fisher's exact test and independent sample t test was used. 5% confidence interval was considered for this study.

p valvue <0.05 was considered significant statistically.

RESULTS

During the study period of 1 year there were 3349 deliveries including 78 twin deliveries ,incidence of 2.32%. The results were tabulated and their statistical significance were studied with respect to maternal morbidity and perinatal mortality.

Table No.1: Distribution of cases according to chorionicity of twin gestation

Type of twinning	No. of cases	Percentage
DCDA	42	84.0
MCDA	7	14.0
MCMA	1	2.0
TOTAL	50	100.0

Study observed that, 42 (84.0%) cases belongs to DCDA, 7 (14.0%) cases belongs to MCDA and only 1 (2.0%) case belongs to MCMA

Table No.2: Antenatal complications wise distribution of cases

Complications	DCDA (N=42)		MCDA (N=7)		Chi-square test P-value & Significance
	No.	%	No.	%	
Hyperemesis gravidarum	35	83.3	6	85.7	$^2_{yates}$ = 0.024, P>0.05, NS
Hypertensive Disorders of pregnancy	23	54.7	4	57.1	$^2_{yates}$ = 0.031, P>0.05, NS
GDM	1	2.4	0	0.0	$^2_{yates}$ = 0.004, P>0.05, NS
Anemia	20	47.6	5	71.2	$^2_{yates}$ = 1.36, P>0.05, NS
Polyhydramnios	2	4.9	1	14.3	$^2_{yates}$ = 0.018, P>0.05, NS
Preterm Labor	17	41.5	2	28.6	$^2_{yates}$ = 0.74, P>0.05, NS
PROM	5	12.1	1	14.3	$^2_{yates}$ = 0.091, P>0.05, NS
Abruption	0	0.0	0	0.0	
Placenta Praevia	1	2.4	0	0.0	$^2_{yates}$ = 0.021, P>0.05, NS

Present study reveals that, there was no statistical significant difference of all complications among DCDA and MCDA groups (P>0.05)

Table No.3: Distribution of cases according to gestational age at delivery

Gestational age	DCDA (N=42)		MCDA (N=7)		Total (%)
	No.	%	No.	%	
28-34 wks	5	11.9	0	0.0	5 (10.2)
34-37 wks	11	26.2	2	28.6	13 (26.5)
>37 wks	26	61.9	5	71.4	31 (63.3)
Total	42	100.0	7	100.0	49 (100.0)
Mean ± SD	36.3 ± 2.54		38.0 ± 2.26	36.57 ± 2.57	
t-test P-value & significance	t = 1.42 P = 0.203 Not significant				

There was no statistical significant difference of gestational age among DCDA and MCDA groups (P>0.05)

Table No.4: Lie and presentations of twi

Lie of twins	Number	Percentage
Cephalic-Cephalic	16	32.6
Cephalic- Breech	14	28.6
Breech- Breech	4	8.2
Breech-Cephalic	4	8.2
Longitudinal-Transverse	2	4.1
Transverse	1	2.0
Shoulder	0	0.0
Oblique	0	0.0
Cephalic-Stuck Twin	0	0.0

Table No.5: Mode of delivery wise distribution of cases

Complications	DCDA (N=42)		MCDA (N=7)		Total (%)
	No.	%	No.	%	
Vaginal	15	35.7	5	71.4	20 (40.8)
Elective CS	3	7.1	0	0.0	3 (6.1)
Emergency CS	24	57.2	2	28.6	26 (53.1)
Vaginal + CS(for 2nd twin)	0	0.0	0	0.0	0 (0.0)
Total	42	100.0	7	100.0	49 (100.0)

Table No.6: Twin specific Birth Weight

Twin	Groups	Birth Weight			
		ELBW (<1kg) No (%)	VLBW (1-1.5kg) No (%)	LBW (1.5-2.5kg) No (%)	Normal >2.5kg No (%)
Twin 1 (N = 49)	DCDA	1 (2.4)	4 (9.5)	30 (71.4)	7 (16.7)
	MCDA	0 (0.0)	0 (0.0)	5 (71.4)	2 (28.6)
	Total	1 (2.0)	4 (8.2)	35 (71.4)	9 (21.4)
Twin 2 (N = 48)	DCDA	1 (2.4)	5 (11.9)	31 (73.8)	5 (11.9)
	MCDA	0 (0.0)	0 (0.0)	5 (75.6)	1 (24.4)
	Total	1 (2.1)	5 (10.4)	36 (75.0)	6 (12.5)

^{2} = **1.236, P>0.05**

Twin 1: There was no statistical significant difference of birth weight among DCDA and MCDA groups (P>0.05)

^{2} = **1.512, P>0.05**

Twin 2: There was no statistical significant difference of birth weight among DCDA and MCDA groups (P>0.05)

Table No.7: Perinatal Mortality wise distribution of cases

Twin	Mortality	DCDA	MCDA	Total
		No (%)	No (%)	No (%)
Twin 1	No	41 (97.9)	6 (85.7)	47 (95.9)
	Yes	1 (2.1)	1(14.3)	2 (4.1)
Twin 2	No	41(97.9)	7 (100.0)	48 (97.9)
	Yes	1 (2.1)	0 (0.0)	1 (2.1)

DISCUSSION

Incidence of twins in this study was (0.71%) .Among 50 cases, 42 cases were DCDA,7 cases were MCDA and 1 case was MCMA accounting 84%,14% and 2% respectively. In a retrospective study by Assuncao R A et al ,incidence was 3.4% involving 289 cases, of these 60.4% were DCDA,30.8% were MCDA and 6.6% were MCMA.1

Mean gestational age in DCDA was 24.3 years and MCDA was 24.5 years. The maximum age of conception in this study was 38 years by ART. In a similar study by Shughufta Yasmeen Rather et al 2,majority of were in 25-35 years.

In our study there was no difference between the incidence of twin pregnancy in multigravida and primigravida. But in studies obtained by Chowdhury who reported the order of twin multigravida (64.2%) as compared to primigravida (35.5%).[3]

Most of them conceived spontaneously.10% conceived by ovulation induction and 2% conceived by ART. In a study by Assuncao R A et al ,3.8%conceived by ART.1

Preterm labor was the most common obstetrical complication among twin gestation. Anemia followed next in order by Hypertensive disorders in pregnancy, were the two most common medical complications in twin pregnancy. Preterm delivery occurred in 19 out of 49 cases of twins accounting for 38.7% cases. Mean gestational age in twin pregnancy in DCDA was 36.3 ± 2.54 and in MCDA was 38.0 ± 2.26weeks.

The incidence of preterm labor in present study was 38.7%, in which 41.5 % DCDA and 28.6% of MCDA . The incidence of preterm delivery was high (88%) in the study done by Bangal et al and it was (44%) as reported by Chowdhury et al. 3,4

In our study, Anemia was found in 25 twin pregnancies accounting DCDA 20(47.6%) and MCDA 5(71.2%) cases. A very high incidence of anaemia was found by Bangal et al (84%) in 2012.4The

corresponding figures reported by Chowdhury were 35.8% for anaemia cases. Similar findings were observed by Brown et al (35.5%) of patients as anaemic in twin gestations.5

In the present study,Incidence of hypertensive disorders in twin pregnancies was 27(55.1%), in which 23(54.7%) cases in DCDA and 4(57.1%) cases in MCDA . Out of which, gestational hypertension comprised 7%, preeclampsia 11% and eclampsia 6% of patients. High incidence of Pregnancy Induced Hypertension was also observed by Bangal et al as 18% and by Chowdhury et al who reported incidence of 22.6% for hypertension cases in twin gestations.3,4

In this study , the incidence of APH in DCDA was 2.4% and no APH cases in MCDA .

Incidence of PROM in this study was 12.2% , in DCDA, 5(12.1%) and MCDA, 1 case (14.3%).Similar incidence of PROM in twin gestations (10%) was seen by Mahita et al.7

In this study, Hydramnios has been recorded in 3 twin pregnancies (6.1%). In DCDA 2 cases (4.9%) and MCDA 1case(14.3%). Similar findings in Chowdhury et al reported incidence of 5.7% for polyhydramnios in twin gestations.3

Incidence of PPH among twin gestation was 5 (10.2%) , in which DCDA(7.1%) and MCDA(28.5%) . The study by Stock S and Norman J Latin America and Singhakun D Thailand with increased rate of occurrence of PPH in twin pregnancies.6,7

Among twin specific complications only one case of fetus payraceus was reported and an another case of single fetal demise. No cases of TTTS ,acardia twins,conjoined twins were noted.

The mean gestational age at delivery was 36 weeks.

Among the presentations, the most common was cephalic-cephalic(32.6%),followed by cephalic –breech. Similar results In the study by Isiaka lawal etal, the most common was cephalic-cephalic.

Majority of twins in our study delivered through caesarean section 59.1%,in which DCDA 64.2% and MCDA 28.5% and 40.8% delivered vaginally. In study by Assuncao R A et al 84.8% delivered by LSCS and 12.8% delivered vaginally.1

Malpresentation was the most common intrapartum complication,seen in one fourth of cases,1 case of cord prolapse, 5 cases of PPH and 1 cases of perineal laceration.

Low Birth Weight (LBW) is birth weight less than 2.5 kg was seen in 35 out of 49 first baby of twins (71.4%) and 36 out of 48 second baby of twins (75%). Taken together for both babies, LBW was seen in 73.1% twins. The incidence of having a baby with a low birth weight (less than 2500 grams) was 82% in their study. 4

Most of babies were having APGAR score > 7 in this study.

NICU admissions were required for 50% of both groups .Most of the admissions were for prematurity, low birth weight and birth asphyxia. The other neonatal complications encountered were hyperbilirubinemia, hypoglycemia, sepsis and neonatal seizures. In study by indira ramaiah et al, reasons for NICU admissions were respiratory distress syndrome 2.17%,VLBW 19.2% and maximum being prematurity.9

No congenital anamolies were reported in this study

The perinatal mortality in twins in present study was 6.12%. Neonatal deaths were higher than still births in twins, implicating prematurity as a major cause of perinatal mortality of twins. For first twin baby, perinatal mortality was 4.1% and that in the second baby was 2%.4

Most of the deaths were in babies weighing less than 1.5 Kg and higher survival rates were seen as the birth weight increased.

The overall perinatal mortality rate was less as compared to other studies. There was no maternal mortality.

CONCLUSION

Multiple pregnancies bear additional risk both for the mother and the baby. Diagnosis of twin pregnancy and determination of chorionicity is essential to anticipate abnormalities of monochorionicity. Antenatal care, with increased rest and nutritional supplementation, early detection of foetal and maternal complications together with thorough intranatal and postnatal vigilance, has much to its credit in lowering both maternal and foetal dangers.

The perinatal mortality could be reduced considerably if we can achieve birth weight of more than 1.5 kg in twins. Thus, proper antenatal care, planned delivery and better facilities for care of premature babies can bring about a reduction in perinatal mortality of twin pregnancies.

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