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ORIGINAL RESEARCH

To compare fetomaternal outcome of twin pregnancies with singleton pregnancies: A prospective study done in Nalanda medical college and hospital, Patna

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ABSTRACT

Background: The purpose of this study was to compare fetomaternal outcome of twin pregnancies with singleton pregnancies

Material and method: This was the prospective study done on patients coming to antenatal clinic and labour room emergency of Nalanda Medical College And Hospital, Patna. Consecutive sampling was done till sample size reached 50 for both twin pregnancies and singleton pregnancies >28 weeks of gestation. Patients fulfilling the inclusion criteria were divided into two groups:

GROUP A: 50 patients of twin pregnancies

GROUP B: 50 patients of singleton pregnancies

Result: The incidence of twin in this study was1.9%, mean maternal age 27.6±3 years for twin pregnancies and 22.5±3years for singleton pregnancies, twin were seen more in multigravida (60%). Anaemia(50%), preterm labour (30%), hypertensive disorder(10%), APH(2%)were the common complications of twin pregnancies. Mean weight of first twin was2.12±0.35 kg kg and that of second twin was1.97±0.3 kg. Caesarian section occurred in 60% of twin pregnancy and the most common indication being malpresentation (24%). Significantly higher incidence of IUGR(10%), birth weight discordance (20%), early neonatal death(5%) and higher rate of NICU admission in twins were recorded

Conclusion: Despite improvement in antenatal and neonatal care, twin pregnancy posses a higher threat to maternal and child outcome than singleton pregnancies.

Keyword: Twin pregnancy, singleton pregnancy, maternal outcome, perinatal morbidity

INTRODUCTION

Twin pregnancies are among major challenges faced by Obstetrician globally. Advancement in assisted reproductive techniques and increase in maternities in older women have both contributed to steep rise in incidence of twin pregnancies. The worldwide incidence varies from 1.9% to 3.3% and incidence is higher in Central Africa and lower in Asia and America.It varies with age <20 years (1.6%) and > 40 years (07%), more in multigravida and with family history of twinning and ovulation induction. Compared to singleton

pregnancies, multiple pregnancies are reported to carry higher maternal and perinatal mortality and morbidity. Major maternal complications include anaemia, hyperemesis gravidarum, hypertensive disorder of pregnancy, antepartum haemorrhage and varicose vein. Fetal complications include low birth weight, prematurity, UGR, congenital anomalies, twin to twin transfusion syndrome(TTTS), twin anaemia polycythemia syndrome(TAPS), discordant twin, single fetal demise ,cord prolapse and locked twins.
Early diagnosis of twin and their chorionicity, detection of fetal and maternal complications, planning the time and mode of delivery and managing its consequences are crucial steps leading to a higher probability of successful outcome. So this study was carried out to compare maternal and fetal outcome of twin pregnancies with singleton pregnancies.

MATERIALS AND METHOD

This prospective study was conducted in the Department of Obstetrics and Gynaecology, Nalanda Medical College And Hospital, Patna from August 2021 to August 2022 on patients coming to labour room, Emergency and OPD after 28 weeks of gestation. Consecutive samples were taken till sample size of 50 reached for both twin pregnancies and singleton pregnancies. They were followed from antenatal clinic, admission to labour room upto delivery and discharge of both mother and baby. Detailed history including maternal age, parity, socioeconomic status, family history of twinning, ovulation induction, maternal medical and obstetric complications, ultrasonography for fetal viability, presentation, malformation and abnormal vascular communications were taken into account.

INCLUSION CRITERIA

History of intake of ovulation inducing drugs especially clomiphene citrate, letrozole and gonadotropins, assisted reproductive techniques, family history of twinning, gestational age> 28 weeks and higher parity.

EXCLUSION CRITERIA

Fibroid in pregnancy, ovarian tumor in pregnancy, ascites in pregnancy, triplets and higher order pregnancies.

OBSERVATION AND RESULT

Total 100 patients were included in this study fulfilling the inclusion and exclusion criteria
Group:A 50 cases of twin pregnancies.
Group: B 50 cases of singleton pregnancies.
In this study of 12months, 4100 deliveries occurred of which 78 were twin deliveries giving incidence of 1.9%.

Table-1 Obstetric profile of patient under study

	GROUP -A		**GROUP-B**	
Mean age	27.6±3 years		22.5±3.5 years	
	No.	**Percentage**	**No.**	**Percentage**
Gravida				
Primigravida	20	40%	28	56%
multigravida	30	60%	22	42%
Pregestational BMI(kg/m²)				
<18.5	5	10%	10	20%
18.5 -24.9	30	60%	25	50%
25-29.9	15	30%	15	30%
Period of gestation (weeks)				

<34	10	20%	5	10%
34-37	25	50%	15	30%
>37	15	15%	30	60%
History of ovulation induction				
Yes	8	16%		
No	42	84%	-	-
Family history of twinning.				
Yes	15	30%	5	10%
No	35	10%	45	90%

Table-1 shows mean age was27.6±3 years for twin mothers and 22.5±3 for singleton pregnancies. About 60% mothers of twin gestation had BMI 18.5 -24.9 kg/m² and that of singleton pregnancy was 21.2±2.1 kg/m². 70% of twin delivered before 37 weeks of gestation however 60 % of singleton pregnancies delivered at term. 30 women were booked in Group-A and 20 were booked in Group-B. Twin were common in multigravida(60%).Group-A had history of ovulation induction (16%)and family history of twinning(30%).

Table- 2 Maternal Complications in study groups

	GROUP -A		**GROUP -B**	
	No.	**Percent**	**No.**	**Percent**
Anaemia	25	50%	10	20%
Hypertension	5	10%	4	8%
Preterm labour	15	30%	5	10%
Premature rupture of membrane	13	26%	6	12%
Antepartum haemorrhage	1	2%	1	2%
Diabetes mellitus	1	2%	2	4%

Table 2 shows major maternal complications in antenatal and intrapartum period in twin pregnancy. 50% women of group-A were anaemic whereas only 20% female in group-B were anaemic. Pretermlabour (30%), premature rupture of membrane(26%) and hypertension in pregnancy (10%) were the other complications prevailed at higher rate in group-A as compared to group -B.

Table 3 Mode of delivery

	GROUP- A		**GROUP -B**	
	No.	**Percentage**	**No.**	**Percentage**
Caesarian section	29+1(only 2nd twin)	60%	15	30%
Vaginal delivery	19	38%	30	60%
Instrumental delivery	1(only 2nd twin)	2%	5	10%

Table-3 shows 60% women in group- A delivered by caesarian section and only 2 % of 2nd twin delivered by instrumental delivery .In one case there was non descent of 2nd twin due to deep transverse arrest. However 60% of women of group- B delivered by vaginal delivery.

Table - 4 Indications of caesarian section

	GROUP- A		**GROUP-B**	
	No.	**Percentage**	**No.**	**Percentage**
Abnormality of labour	6	12%	1	2%
Fetal distress	6	12%	5	10%
Hypertension	4	8%	2	4%
Previous 1 lscs	6	12%	5	10%
Antepartum haemorrhage	1	2%	1	2%
Fetal malpresentation	12	24%	1	2%

Fetal malpresentation(24%) was most common indication of caesarian section in group-A followed by fetal distress (12%), abnormalities of labour(12%) and previous 1 LSCS (12%).Whereas only 2% caesarian section was done in group-B for fetal malpresentation.

Table -5 Birth weight of babies under study

	GROUP- A		GROUP- B	
	No.	**Percentage**	**No.**	**Percentage**
ELBW <1kg	5	5%	1	2%
VLBW 1-1.5 kg	20	20%	4	8%
LBW 1-2.5 kg	45	45%	10	20%
NORMAL >2.5 kg	30	30%	35	70%

Mean birth weight of 1st twin was 2.12±0.35 kg while of 2nd twin was 1.97±0.3 kg.45% of babies out of 100 babies of twin deliveries were low birth weight and needed NICU admission. However 70% babies had normal birth weight in singleton pregnancies.

Table- 6 Perinatal Complications in two group

	GROUP-A (100Neonates)		GROUP-B (50 Neonates)	
	No.	**Percentage**	**No.**	**Percentage**
Nil	25	25%	35	70%
IUGR	10	10%	5	10%
Birth weight discordance	20	20%	-	-
Early neonatal death	5	5%	2	4%
Low APGAR<7 In 5 minute	40	40%	8	16%

Table-6 shows growth discordance of 20% that was seen in 20 % of babies of twin pregnancies and 40% of babies had low APGAR score.

DISCUSSION

Twin pregnancies are associated with increased risk of obstetric complications as well as perinatal morbidity and mortality .Among mothers included in this study majority were between 21 – 30 years of age, with mean of 27.6±3 years for twin gestation. Almost similar mean maternal age of 28.3±4.05years was observed in study done by Jhaveri RR and Nadkarni TK at Nowrosjee Wadia maternity Hospital. In advertent use of ovulation induction has contributed to rise in multiple gestation .In this study ovulation induction was done in 16% cases. Mc dowell S et al showed ovulation induction as a major risk factor for multiorder pregnancies.

35 twin babies were delivered in <37 weeks of gestation and most common maternal complication was anemia seen in both twin and singleton pregnancy however percentage were more for twin gestation.

Caesarian section was preferred mode of delivery in 60% twin gestation however 60% mother of singleton pregnancy delivered vaginaly and most common indication for caesarian section in twin pregnancy being malpresentation(24%). Smrity Maskey and Yam Dwa in 2018, studied most common associated factor of malpresentation was oligohydramnios and twin pregnancies .Mean weight of 1st twin was 2.12±0.35kg and 2nd was 1.97±0.3 kg. Average weight of baby of singleton pregnancy was 2.75±0.3 kg. Fetal complications like weight discordance(20%), IUGR(10%)and low APGAR score were more in twin babies than singleton babies. There was no maternal mortality in this study .Present finding is consistent

with studies conducted by Masuda S and Sultana H who did not reported any maternal mortality.

CONCLUSION

Management of twin pregnancies is a challenging task to obstetricians Early diagnosis of multifetal gestation and management of anemiaduring early gestation, regular ANC and follow up by Ultrasound is required to reduce fetal and maternal complications. Hospitals should be equipped to handle the emergencies like preterm delivery, breech delivery, cord prolapse, instrumental delivery, eclampsia and postpartum haemorrhage. ICU and NICU facilities should be available in hospital for mother and neonatal care. Proper counselling to mother for regular ANC and use of contraception following delivery can lower the fetal and maternal morbidity and mortality.

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