



Study of Maternal and Perinatal Outcome in Twin Pregnancy at a Tertiary Care Hospital: An Observational Study

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Abstract

Multiple pregnancies are associated with increased maternal and neonatal complications. The present study aims to understand the maternal and perinatal outcomes of multiple pregnancies delivering at a tertiary care hospital of Northern India. The observational study was conducted in the department of obstetrics and gynecology, Sardar Patel Medical College and Hospital, Bikaner over a period of six months (Feb 2018 to August 2018). It included all women admitted in antenatal ward and labor room with clinical or ultrasound diagnosis of twin pregnancy after 28 weeks of gestation. The incidence of twins in this study was 0.89%. Twins were seen more in multigravidas(53.17%) as compared to primigravidas (46.83%). Preterm labour (79.74%) and anemia (74.68%) were the commonest obstetric complications, whereas hypertensive disorders (16.45%) and PPH (13.92%) were other common complications in twin pregnancies. The rate of caesarean section was 40.50%. There were 36 perinatal deaths. Extreme prematurity and very low birth weight mainly contributed to Perinatal mortality

Respiratory distress, neonatal sepsis and DIC were the common causes of neonatal deaths. Early diagnosis of twin gestation with its chorionicity, regular antenatal checkups, early diagnosis and management of obstetrical complications, good diet, cervical encerclage in selective cases, maternal gluco-corticoids therapy in preterm labour, short term tocolysis, institutional delivery and better neonatal care facilities at hospital can improve the maternal and perinatal outcome in twin pregnancy.

Keywords: *Twin pregnancy, Preterm labour, Perinatal outcome.*

Introduction

Twin pregnancy is considered as a high risk pregnancy. The Worldwide incidence of multiple pregnancies is around 2 -20 per 1000 births^[1]. Twin pregnancy is due to multiple factors mainly

genetic and environmental factors, such as advanced maternal age and increased parity^{[2], [3]}.

In India, twin pregnancy occurs in approximately 1% of all pregnancies and has been found to be responsible for 10% of perinatal mortality^{[3]-[6]}.

The incidence of twins is rising due to the increased use of assisted reproductive techniques and due to the pregnancy at advanced age^[7]. Twin pregnancy has been associated with many maternal complications such as anemia, hyperemesis, pregnancy induced hypertension, antepartum hemorrhage, preterm labour, polyhydramnios, varicose veins and gestational diabetes. Fetal complications have been reported more in monozygotic pregnancies as compared to dizygotic twins. Monochorionic twin gestations are at increased risk of preterm labour, discordant fetal growth, fetal malformations, higher abortion rate, abnormal vascular communications, cord complications and stillbirths^[8]. Diagnosis of twin pregnancy in early gestation by ultrasonography can aware the obstetrician regarding need for more vigilance during antenatal period as well it helps in counseling the patient regarding possibility of adverse perinatal outcome^{[9],[10]}. Present study was undertaken to analyze the maternal and fetal outcome in twin pregnancy and to find out various factors that contribute to adverse perinatal outcome.

Material and Methods

This observational study was carried out in the department of Obstetrics and Gynaecology of Sardar Patel Medical College and Hospital, Bikaner, Rajasthan over a period of 6 months from February 2018 till August 2018. All women with twin pregnancy admitted during antenatal period or during labour were enrolled in the study. They were followed throughout the pregnancy till delivery. Mother and baby were followed up till discharge from the hospital. Data related to maternal age, gestational age, parity, maternal medical and obstetrical complications, sonographic parameters like chorionicity, expected fetal weight, fetal discordancy, fetal viability, malformations, evidence of abnormal vascular communications and presentations of both fetuses was collected in a structured proforma. 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 were recorded. Anaemia was classified by WHO criteria: mild anaemia 9-10.9gm/dl, moderate anaemia 7-8.9 gm/dl and severe anaemia <7gm/dl. Postpartum haemorrhage was defined when more than 500 ml blood loss in normal delivery and one liter in cesarean section or any amount of blood loss that leads to unstable vitals in postpartum period. Data was collected and analyzed by finding percentages.

Results

During six months study period, there were total 8840 deliveries including 79 twin deliveries, giving twin delivery rate of 0.89%. The distribution of cases in relation to maternal socio-demographic profile is shown in Table 1. Maximum numbers of women (68.35%) were in their peak fertile age group of 20 -30 years. The twins were seen almost equally among primi (46.84%) and multigravidas (53.16%). Majority of the women were unbooked 64.55%. This can be explained by the fact that majority of the women in Rajasthan lives in rural area, are uneducated, with lower socioeconomic status and visits the hospital at later gestations. Table 2 showing maternal complications observed in twin pregnancies. Preterm labour (79.74%) was the commonest antenatal complication followed by anemia (74.68%). Pregnancy induced hypertension was seen in 16.45% of women. Onset of labour was spontaneous in all cases of twins. The caesarean section rate was 40.50%. Elective cesareans were performed mainly for malpresentations. Emergency sections were performed for antepartum hemorrhage, cord complications, failure of progress of labor, severe oligohydramnios and uncontrolled pregnancy induced hypertension.

Fetal prematurity was seen in more than 75% babies where as 24.68% babies had very low birth weight. There were 5 stillbirths and 31 early neonatal deaths. Overall perinatal deaths were

22.78%.Prematurity and low birth weight predisposed majority of early neonatal deaths. These small babies suffered from respiratory distress (9cases), pulmonary hemorrhage (3cases), septicemia (16cases) and disseminated intravascular coagulation (3cases). (Table .3)

Table 1: Maternal Socio Demographic Profile

S.No	Maternal Profile	Number	% Age
1	Age Distribution		
	<20 Yrs	9	11.39
	20-30 Yrs	54	68.35
	30-40 Yrs	15	18.98
	>40 Yrs	1	1.26
2	Parity Distribution Gravida		
	1	37	46.83
	2-4	35	44.30
	>4	7	8.86
3	Registration Status		
	Booked	28	35.44
	Unbooked	51	64.55
4	Socio Economic Status		
	Lower	46	58.22
	Middle	29	36.70
	Upper	4	5.06
5	Gestational Age		
	<34 Weeks	32	40.50
	34-37 Weeks	31	39.24
	>37 Weeks	16	20.25

Table 2: Antenatal Complications in Relation to Twin Gestation

S.No	Antenatal Complications	Number	% Age
1	Preterm Labour	63	79.74
2	Pre Eclampsia	13	16.45
3	Malpresentations		
	First Baby	31	39.24
	Second Baby	16	20.25
4	Anemia	59	74.68
	Mild	20	25.31
	Moderate	32	40.50
	Severe	7	8.86
5	Polyhydramnios	9	11.39
6	APH	4	5.06
7	PROM	13	16.45
8	PPH	11	13.92
9	Maternal Mortality	0	0

Table 3: Showing Mode of Delivery and Perinatal Outcome in Twin Gestation

S.No	Perinatal Outcome	Number	% Age
1	Mode of Delivery-		
	Vaginal	47	59.49
	Caesarean	32	40.50
2	Fetal Birth Weight-		
	<1.5 Kg	39	24.68
	1.5-2 Kg	37	23.41
	2-2.5 Kg	46	29.11
	>2.5kg	36	22.78
3	Sex of the Baby-		
	-Male	84	53.16
	-Female	74	46.83

4	Fetal Outcome At Birth-		
	- Livebirth	153	96.83
	-Stillbirth	5	3.16
5	Prematurity	126	79.74
6	Iugr	26	16.45
7	Neonatal Outcome-		
	-NICU Admission	103	65.18
	1 st Baby	47	29.74
	2 nd Baby	56	35.44
	-Neonatal Mortality	31	19.62
8	Causes of Neonatal Deaths-		
	-RDS	9	5.69
	-Septicemia	16	10.12
	-Pul.Hemorrhage	3	1.89
	-DIC	3	1.89

Discussion

The incidence of twins in the present study (0.89%) was comparable with the incidence of twins in India which is around 0.9%-1% obtained for various studies. In our study majority of the women with twin gestation (68.35%) were in age group of 20-30 years similar to the findings obtained by Bangal et al in his study which is the peak reproductive age group.^[11] The incidence of twins in the present study was higher in multigravidas (53.17%). Similar result has been reported by Chaudhary S in his study where twins were more common in multigravidas (64.2%) as compared to primigravidas (35.8%).^[12]

The incidence of preterm delivery was much higher (79.74%) in the present study similar to the preterm rate in twin gestation reported (84%) by Bengal *et al.*^[11] The incidence of anaemia in our study was 78.74% similar result was found by Bangal et al (66%) in 2012. The incidence of Pregnancy Induced Hypertension in our study was 16.45%. Similar results were observed by Bangal et al as 18% and by Chowdhury et al who reported incidence of 22.6% for hypertension cases in twin gestations.^{[11],[12]} In this study the incidence of APH was 5.06%. Similar incidence of APH was seen (2%) by Yuel Veronica et al.^[13] In our study the incidence of PROM was 16.45% similar to the incidence of PROM in twin gestations (10%) seen by Mahita et al.^[14] In this study, Hydramnios has been recorded in 9 twin pregnancies. Hydramnios was seen in 12% cases of twin gestations by Bangal et al which is very similar to the incidence of Hydramnios in present study (11.39%).^[11]

Chowdhury et al reported lower incidence of 5.7% for polyhydramnios in twin gestations.^[12] Incidence of PPH among twin gestation was 11 (13.92%). Many studies have shown similar results, Stock S and Norman J Latin America and Singhakun D Thailand with increased rate of occurrence of PPH in twin pregnancies.^{[15], [16]}

The incidence of having a baby with a low birth weight (less than 2500 gms) was 77.20% in the present study, which was much higher than reported (51.3%) by Australia's Mothers and Babies, AIHW, 2011 for twin pregnancies.^[17]

Very similar incidence of LBW was quoted by Bangal et al.^[11] First baby of twin required NICU admission in 47 out of 103 cases (29.74%) and second baby required the same in 56 cases out of total NICU admission 103 (35.44%). Most common causes of NICU admissions were prematurity and LBW. Higher rate of NICU admissions in 2nd twin was mainly due to greater presence of birth asphyxia in them. This was comparable to the study done in Kerala by Radhakrishnan R et al, in which NICU admission was required in 28.5% of 2nd twin compared to 23% of 1st twin.^[18]

There were 36 perinatal deaths (22.78%) in our study among 158 twin newborns which was comparable to Bengal et al study.^[11] Most of the deaths were in babies weighing less than 1.5 Kg (66.36%) and higher survival rates were seen as the birth weight increased. Similarly, Mahita Reddy et al found highest perinatal mortality in birth weight of 1-1.5 kg and highest survival in >2.5 kg weight.^[14] The caesarean section rate in our study was 40.50% which is in corroboration with Bangal et al who reported the caesarean section rate to be 33%.¹¹ The increased caesarean section rate in twin pregnancy may be due to increased incidence of other obstetric indications for caesarean deliveries such as hypertensive disorders, malpresentation, cord prolapse, and premature rupture of membranes as observed in this study. There was no maternal death in our study.

Conclusion

Multiple pregnancies bear additional risks both for the mother and the baby. Diagnosis of twin pregnancy in early gestation is essential to anticipate abnormalities of chorionicity. Proper antenatal care, increased rest and nutritional supplementation, early detection of foetal and maternal complications with intranatal and postnatal vigilance can lower both maternal and foetal morbidity and mortality. Majority of deaths in our study were seen in extremely premature and very low birth weight babies. Most of these babies had respiratory distress or had developed neonatal sepsis. These deaths can be prevented by averting preterm deliveries by combined measures like good rest, cervical encerclage when incompetence is suspected, tocolysis, prevention of maternal complications like anemia and pre-eclampsia, administration of glucocorticoids in preterm labour, by institutional delivery and good neonatal intensive care. Thus proper antenatal checkups, institutional delivery and better facilities for care of premature babies can bring about a reduction in perinatal mortality of twin pregnancies.

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