

A Study of Maternal and Neonatal Outcome in Case of Twin Gestation

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Abstract

Background: Twin gestation are the major cause of perinatal and neonatal morbidity and it represents one of the principal targets for obstetric health care. Aim of this study is to identify etiological factors and to assess the outcome with twin gestation. **Methods:** The study conducted in WEST INDIA in a tertiary care center for a period of 5 year (January 2012 to December 2017). A total of approx 500 antenatal cases with twin gestation attending antenatal OPD in our hospital study. Antenatal USG scan done to document twin gestation and confirm type of twins gestation and gestational age. Maternal parameters (demographic and physiological) and fetal outcome (birth weight, NICU admission, etc) parameters documented and analysed using statistical methods. **Results:** Patients with twin gestation, more than 28 weeks of pregnancy, booked, emergency and referred cases are taken as inclusion criteria for patients.

- Incidence of twin pregnancy in this study was 1.05%, Positive family history was found in 4% cases.

Positive obstetric history of twins was found in 9.3% cases, In our study, 89% had conceived spontaneously, 9.7% after ovulation induction by clomiphene citrate and gonadotrophins, and 1.3% after IVF. Most of the patients were primiparous and second gravida (29%, 33.3%) and from low socio-

economic class (63%). 70.7% mothers developed preterm labour before 37 completed week. Antepartum, intrapartum and postpartum maternal and fetal complications were studied. Preterm labor was the commonest complication in our study. Incidence of preterm labor was 71%, pre-eclampsia 22% and anemia 27%. Antepartum haemorrhage was not seen in any patient. Post partum hemorrhage was seen in 2.7% cases. Pressure symptoms in form of breathlessness oedema feet was seen in 13% patients. Commonest presentation was vertex-vertex 31% followed by breech-breech 27%.

- In the present study
 - a. Cephalic-cephalic in 31%
 - b. Cephalic-breech in 21%
 - c. Breech-breech in 27%
 - d. Breech-cephalic in 20%
- The majority of cases in this study had vaginal delivery (57%) and 39% had cesarean sections. 1.3% of first twin delivered by forceps. In vertex presentation incidence of LSCS was 13%. In breech presentation incidence of LSCS was 24%. The most common indication of cesarean section being non vertex presentation of the first baby followed by fetal distress.
- Incidence of maternal morbidity
 - >blood transfusion (26.6%)
 - >breast engorgement (10.7%)
 - >wound gap (6.7%)
 - >decreased milk secretion (6.7%)
 - >UTI (2.7%)
 - >Puerperal infection (2.7%)
- Neonatal morbidity was in form of RDS (30%), Jaundice (7%), Sepsis (2%),

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Hypoglycemic convulsion (3%), Asphyxia (3%). In the present study, 5.4% of first twin and 9.4% of second twin were less than 1500 grams; 81.3% of first twin and 77.3% of second twin were between 1500-2500 grams and 13.3% of first twin and 13.3% of second twin had a birth weight of >2500 grams. 1st twin with birth weight 1-1.5 kg neonatal mortality was 75% while for birth weight 1.5-2 kg it was 8%. 2nd twin with birth weight 1-1.5 kg neonatal mortality was 86% while for birth weight 1.5-2 kg it was 14%. In our study, 45.33% NICU admission was observed for prematurity, low birth weight, Respiratory Distress Syndrome, septicemia and hypoglycemia. Neonatal mortality was seen in 14.6% of cases, were prematurity, hyaline membrane disease, meconium stained liquor aspiration being the commonest cause of death.

Keywords: Twin Gestation; Etiology; Risk Factor.

Introduction

The phenomenon of twinning has fascinated mankind throughout its recorded history. Twins have often been regarded as being inherently different from singletons, and societal responses to their birth have ranged from awe to fear [1].

The incidence of twin pregnancies has increased remarkably since the late seventies because of the improved reproductive medicine and a greater proportion of older pregnant mothers who naturally have a higher incidence of multiple gestation [2,3]. The occurrence and frequency of twinning varies across human populations [4]. Twin pregnancy is considered a high-risk pregnancy; different aspects of the risk include the mode of delivery, which remains a subject of a controversy and discussion among obstetricians

Materials and Methods

The prospective study conducted in WEST INDIA in a tertiary care centers for a period of 5 year (January 2012 to December 2017). A total of 500 antenatal cases with twin gestation attending antenatal OPD in our hospital study. Antenatal USG scan done to document twin gestation and confirm type of twins gestation and gestational age. Maternal parameters (demographic and physiological) and fetal outcome (birth weight, NICU admission, etc) parameters documented and analysed using statistical methods.

Inclusion Criteria

A patient who has twin pregnancy:

- Antenatally booked, emergency or referred cases of Twin Gestation documented by USG scan done not.
- Gestation age more than or equal to 28 weeks.
- Patient who give consent

Exclusion Criteria

- Medical disease (e.g. heart disease, renal disease, respiratory disease, chronic hypertension).
- Gestational age less than 28 weeks.
- Patient delivered outside the hospital.
- Patient not consenting to participate in the study

Observation

Majority of the patients had babies with low birth weight (1500-2500gm). 81.3% of twin 1 and 77.3% of twin 2 were of low birth weight.

Table 1: Incidence of twin delivery in Government Hospital in 5 years

Year	Incidence
2012-2013	(14/1000 births)
2013-2014	(16 / 1000 births)
2014-2015	(11 / 1000 births)
2015-2016	(15 / 1000 births)
2016-2017	(11 / 1000 births)

Table 2: Socioeconomic Status

Status	No of cases (%)
Lower	62.7%
Middle	33.3%
Upper	4%

Table 3: Parity

Parity	No of cases (%)
0	29.3%
1	33.3%
2	26.7%
3	6.7%
>4	4%

Table 4: Family history of twin gestation

Family history	No of cases (%)
Present	9.3%
Absent	91.7%

Table 5: Mode of conception

Mode	No of cases (%)	
	Present study	Shilpa H B 2013
Spontaneous	89%	76.6%
Ovulation Induction	10.7%	23.4%
IVF	1.3%	-

Table 6: Obstetric outcome

Obstetric Outcome	No. of Cases
Preterm Delivery	
- 34-37 Weeks	60%
- <34 Weeks	10.7%
Term Delivery	29.3%

Table 7: Maternal complications

Complications	No of Cases (%)
Pre-term labor	70.7%
Anemia	26.7%
Pre-eclampsia	22.6
PROM	1.3%
PPH	2.7%
Blood transfusion	26.6%
Breast engorgement	10.7%
Decreased milk secretion	6.7%
Wound gape	6.7%
Postpartum eclampsia	1.3%
UTI	2.7%
Puerperal pyrexia	2.7%

Table 8: Fetal presentation and Mode of delivery

Fetal presentation	(%)
Cephalic + Cephalic	30.7%
Cephalic + Breech	21.3%
Breech + Breech	26.7%
Breech + Cephalic	20.0%
Cephalic + Transverse	1.3%

Mode of Delivery	(%)
Normal delivery	57.3%
LSCS	38.7%
Instrumental	1.3%
1st vaginal, 2nd LSCS	2.7%

Table 9: Indication of LSCS

Indication	No of cases
Fetal distress meconium stained liquor	24
1 st Breech	74
Previous LSCS (1st breech)	32
Oligohydramnios	13
Previous 2 LSCS	6
Pre-eclampsia	7
Cord prolapsed	13
Prolonged PROM	6
Precious pregnancy	13
2nd baby hand prolapsed	6

Table 10: birth weight

	Birth weight (Kg)		
	VLBW (<1.5)	LBW (1.5-2.5)	>2.5
1 st TWIN	5.4%	81.3%	13.3%
2 nd Twin	9.4%	77.3%	13.3%

Table 11: Maturity wise distribution

Maturity	TWINS	
	Percentage of 1st Twin	Percentage of 2nd Twin
>=37	2.67%	2.67%
32-36	80%	65.33%
<32	17.33%	32%

Table 12: Distribution according to causes of neonatal morbidity

	Twin	
	Percentage of 1st Twin	Percentage of 2nd Twin
RDS	29.36	30.1
Birth asphyxia	1.3	2.7
Jaundice	6.7	6.8
Sepsis	2.6	-
Hypoglycemic convulsion	2.6	-
Intraventricular Haemorrhage	1.3	1.3
IUGR	4	2.7

Table 13: Comparative study of chorionicity

Study	DADC	DAMC	MAMC
Apichart et al.(2006)	60%	40%	--
Sezer SD et al.(2010)	65%	31%	10.7%
Present study 2017	61.33%	36%	2.64%

Table 14: Perinatal outcome

Perinatal outcome	Present Study	Shilpa HB 2014
NICU admission	45.33%	50%
IUFD	2.6%	3.3%
Neonatal mortality	14.66%	18.3%

Table 15: Causes of neonatal mortality

Causes	No. of Cases	1 st twin	2 nd twin
Meconium aspiration syndrome	20	7	13
Septicaemia	13	6	7
Congenital anomaly	8	8	
Hyaline membrane disease	95	26	69
Hypoxic ishaemic encephalopathy	7	7	-

Majority of babies are of low birth weight because of prematurity and some are IUGR babies. The chance of survival is directly related to birth weight. A baby weighing >1500gm is more likely to survive. With intensive neonatal care babies weighing between 1000- 1500gms can survive.

All zygotic twins are always DADC in monozygotic twins type depends upon the time of division. Most common type being monochorionic diamniotic in which division occurs 4-8 days after fertilization.

Conclusion

All mothers with twin pregnancy should be counseled regarding possible complications, as compared to singleton pregnancy. Therefore, they should be advised to have frequent antenatal visits and report immediately to hospital in the event of any complications (e.g preterm labor).

Majority of the complications can be prevented with intensive approach and protocols during antenatal period and labor.

Twin gestation continues to be at higher risk despite advances in obstetric and perinatal care and facilities. Therefore, these patients should be managed at tertiary care centers with well-equipped neonatal intensive care unit and trained staff.

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