



FETOMATERNAL OUTCOME IN TWIN PREGNANCY AT A TERTIARY CARE HOSPITAL.

Obstetrics And Gynaecology

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ABSTRACT

Background The incidence of multiple births has risen in the last 30 years. Two important factors associated with this are the tendency towards increased maternal age and the increasing use of medical assistance for conception. Twin pregnancy is significant risk factor for maternal and perinatal morbidity and mortality.

Aims and Objectives

1. To analyse maternal and fetal complications related to twin pregnancy.
2. Mode of delivery.

Materials and Methodology The present prospective observational study was conducted in the postgraduate department of Obstetrics and Gynaecology, Lalla Ded Hospital, an associated hospital of Government Medical College Srinagar over a period of one and a half years from December 2020 to June 2022, after obtaining ethical clearance from institutional ethical committee, during which all twin pregnancies, presenting to the hospital irrespective of gestational age were included. **Results** The incidence of twin pregnancy in our study was 7 per 1000. The mean maternal age was 30.8 years with most common age group of 30-34 years. Twin pregnancy was most commonly seen in multiparous women (61.4%). Most common underlying comorbidity was hypothyroidism (33.5%). Mean gestational age at the time of delivery was 36.1 weeks with SD of 5.32. Most common fetal presentation was vertex-vertex (51.2%). Most fetuses were dichorionic diamniotic (66.5%). 59.1% women were delivered by caesarean section. Most common indication of caesarean was malpresentation (45.8%). Of the maternal antepartum complications, anemia ranked first which was present in about 59.5%. Preterm labour in 55.8% and hyperemesis in 34.9%. Most common fetal complication was low birth weight in 74.8%, preterm in 42.8% and NICU admission in 33.5%. **Conclusion** The knowledge of maternal and fetal complications helps in better surveillance and prevention of adverse outcome. This clearly indicates the need for screening programs for early detection of twin pregnancies, timely referral, better antenatal care and delivery at institution with good neonatal care unit.

KEYWORDS

Twin Pregnancy, Maternal And Fetal Outcome.

INTRODUCTION

Multiple pregnancies account for 3-4% of births globally, though the incidence rate appears to be variable among different parts of the world.¹ Twin pregnancies are associated with increased maternal morbidity² as well as poor perinatal outcomes³. Maternal complications include maternal hemodynamic changes, gestational hypertension, preeclampsia, gestational diabetes, others like pruritic urticarial papules and plaques of pregnancy, intrahepatic cholestasis of pregnancy, acute fatty liver of pregnancy, iron deficiency anemia, hyperemesis gravidarum, abruptio, and thromboembolism⁴.

Fetal complications include growth restriction, congenital anomalies, preterm birth⁵. Twin-twin transfusion syndrome, twin anemia polycythemia sequence, selective fetal growth restriction, twin reversed arterial perfusion sequence, single fetal demise, congenital anomalies are of particular concern in monochorionic twin pregnancies⁶. In addition to the problems of monochorionic diamniotic placentation described above, intertwin cord entanglement and conjoined twins are of particular concern in monoamniotic twin pregnancies. This study was undertaken in our institution to assess the maternal and fetal complications with twin pregnancy. The knowledge of maternal and fetal complications helps in better surveillance and prevention of adverse outcome. This study was undertaken in our institution to assess the maternal and fetal complications with twin pregnancy.

AIMS AND OBJECTIVES

1. To analyse maternal and fetal complications related to twin pregnancy.
2. Mode of delivery

MATERIALS AND METHODS

The present prospective observational study was conducted in the postgraduate department of Obstetrics and Gynaecology, Lalla Ded Hospital, an associated hospital of Government Medical College Srinagar over a period of one and a half years from December 2020 to June 2022, after obtaining ethical clearance from institutional ethical committee, during which all twin pregnancies, presenting to the

hospital irrespective of gestational age were included.

Inclusion criteria:

All patients admitted in Lalla Ded Hospital with diagnosed twin pregnancy from first trimester to labour.

Exclusion criteria:

Singleton pregnancy, triplets, high order pregnancy. The study was conducted in patients fulfilling the inclusion criteria. Informed consent was taken from the patients. Institutional ethical committee approval was sought. This study was an observational analysis and no intervention was introduced.

A detailed relevant history was taken from the patients according to the structured proforma. Maternal monitoring included general, physical, systemic and obstetrical examination, blood pressure measurement, screening for gestational diabetes, haemoglobin estimation and other baseline investigations. Fetal monitoring was done with serial ultrasound. Antenatal corticosteroids were administered to women at risk of iatrogenic or spontaneous preterm birth. A proforma was designed for this study as well and the cases were studied from admission to discharge.

Statistical Analysis:

Statistical analysis was performed with the use of software SPSS version 21.

RESULTS AND OBSERVATIONS:

Table 1: Age distribution of study patients

Age (Years)	Number	Percentage
< 25	11	5.1
25-29	68	31.6
30-34	85	39.5
35-39	51	23.7
Total	215	100
Mean±SD (Range)=30.8±4.18 (23-38)		

The study included 215 Kashmiri twin pregnant women aged between 23 years to 38 years. Most of the females were in age group of 30-34(39.5%) years followed by 25-29(31.6%) with mean $\pm$ SD of 30.8 $\pm$ 4.18.

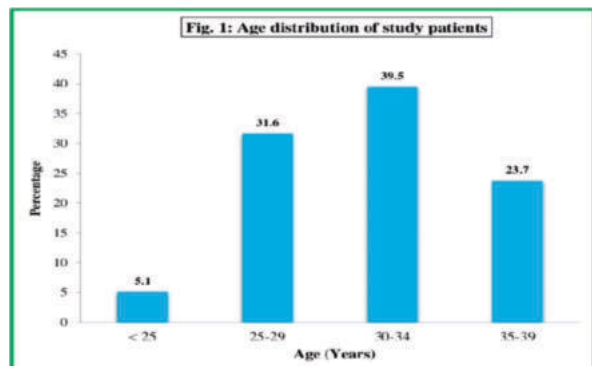


Table 2: Parity of study patients

Parity	Number	Percentage
Primigravida	83	38.6
Gravida 2	51	23.7
Gravida 3	63	29.3
≥Gravida 4	18	8.4
Total	215	100

Table 2 shows parity of the study patients. Most patients were multiparous.

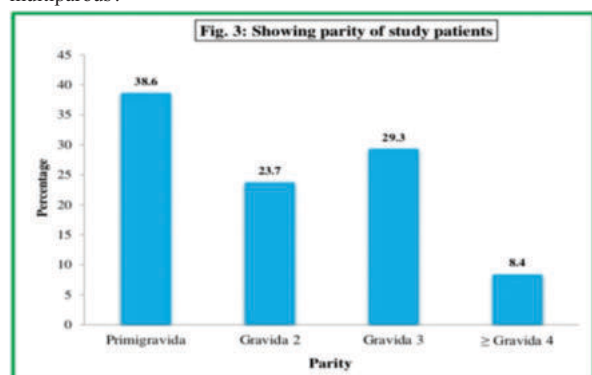


Table 3: Underlying comorbidities of study patients

Comorbidity	Number	Percentage
Hypertension	20	9.30
Diabetes Mellitus	4	1.86
Hypothyroidism	72	33.48
Others	30	13.95

Table 3 shows underlying comorbidity in study patients. Hypothyroidism was in 33.48%, Hypertension in 9.30%, Diabetes mellitus in 1.86% and others in 13.95% patients.

Table 4: Gestational age (weeks) at delivery in study patients

Gestational age (weeks)	Number	Percentage
Extreme prematurity (<28)	24	11.2
Severe prematurity (28 - 31)	8	3.7
Moderate prematurity (32 - 33)	8	3.7
Near term (34 - 36)	56	26
Term (≥37)	119	55.3
Total	215	100

Mean $\pm$ SD=36.1 $\pm$ 5.32

Table 4 shows gestational age of patients at delivery with mean $\pm$ SD=36.1 $\pm$ 5.32

Table 5: Distribution as per fetal presentation

Fetal presentation	Number	Percentage
Vertex - Vertex(VV)	110	51.2
Vertex - Breech(VB)	18	8.4
VertexTransverse(VT)	16	7.4
Breech-Breech(BB)	19	8.8
Breech-Vertex(BV)	24	11.2

Breech-Transverse(BT)	12	5.6
Transverse-Vertex(TV)	12	5.6
Transverse-Breech(TB)	4	1.9
Total	215	100

Table 5 shows the fetal presentation of study patients. Most common fetal presentation was vertex-vertex 51.2% followed by breech-vertex in 11.2% patients.

Table 6: Chorionicity of fetus

Mode of delivery	Number	Percentage
Casearean section	127	59.1
Vaginal delivery	84	39.1
Vaginal - Casearean	4	1.9
Total	215	100

Table 6 shows the chorionicity of fetus as determined by ultrasonography. Most fetus were dichorionic diamniotic 66.5% followed by monochorionic diamniotic 26% and monochorionic monoamniotic 7.4%.

Table 7: Mode of delivery among study patients

Indications for caesarean section	Number (n = 131)	Percentage
Malpresentation	60	45.8
Previous Casearean	40	30.5
Antepartum hemorrhage	8	6.1
Fetal distress	39	29.8
Abnormal Labour	4	3.1
Cephalopelvic disproportion	12	9.2
Monochorionic monoamniotic	16	12.2
Monochorionic diamniotic	16	12.2
Bad obstetric history	12	9.2

Table 7 shows most of the women were delivered by casearean section 59.1% whereas 39.1% were vaginally delivered.

Table 8: Indications for caesarean section in study patients [n=131]

Maternal complications	Number	Percentage
Anemia	128	59.5
Hyperemesis	75	34.9
Preterm Labour	120	55.8
Gestational diabetes mellitus	47	21.9
Hypertensive disorder	47	21.9
Polyhydraminos	31	14.4
Oligohydraminos	23	10.7
Postpartum hemorrhage	23	10.7
Preterm rupture of membranes	20	9.3
Antepartum hemorrhage	8	3.7
Eclampsia	8	3.7
Prolonged labour	4	1.9
Others	12	5.6

Table 8 shows indication for caesarean section in study patients. Most common indication was malpresentation in 45.8% followed by previous caesarean in 30.5% and fetal distress in 29.8%.

Table 9: Maternal complications among study patients

Birth weight (gm)	Fetus 1 (n=215)		Fetus 2 (n= 215)	
	Number	Percentage	Number	Percentage
Normal weight(>2500)	65	30.2	43	20.0
Low birth weight (1500-2500)	106	49.3	120	55.8
Verylow birth weight (1000-1500)	20	9.3	28	13
Extremely low birth weight(<1000)	24	11.2	24	11.2
Total	215	100	215	100

Table 9 shows maternal complications in study patients. Most common complication was anemia in 59.5%, preterm labour in 55.8% and hyperemesis in 34.9%.

Table 10: Fetus wise birth weight

Apgar score	1 min		5 min	
	Number	Percentage	Number	Percentage
Normal (7-10)	119	55.3	127	59.1

Fairly low(4 -6)	52	24.2	48	22.3
Critically low(0-3)	44	20.5	40	18.6
Total	215	100	215	100

Table 10 shows comparison of birth weight of first fetus to second fetus normal birth weight (>2500 gm) was observed in 30.2% of first fetus and 20% of second fetus while as low birth weight (1500-2500 gm) and very low birth weight (1000-1500 gm) was more in second fetus (55.8%) and (13%) as compared to first fetus (49.3%) and (9.3%) respectively. Extremely low birth weight (<1000 gm) was similar (11.2%) in both the fetus. Table 11: Apgar score of first fetus at 1 and 5 minutes

Table 12: Apgar score of second fetus at 1 and 5 minutes

Apgar score	1 min		5 min	
	Number	Percentage	Number	Percentage
Normal(7-10)	92	42.8	103	47.9
Fairly low (4-6)	71	33	64	29.8
Critically low(0-3)	52	24.2	48	22.3
Total	215	100	215	100

Table 11 and 12 shows normal apgar score (7-10) at one minute and 5 minutes of first fetus (55.3% and 59.1%) was better than second fetus (42.8% and 47.9) respectively.

While apgar score which was fairly low (4-6) and critically low (<4) was seen more in second fetus as compared to first fetus.

Table 13 : Fetal complications among study patients

Fetal complications	Number (430)	Percentage
Low birth weight	322	74.88
Preterm	184	42.8
NICU admission	144	33.5
Fetal growth restriction	46	10.7
Intrauterine death of one fetus	32	7.4
Intrauterine death of both fetus	32	7.4
Fetal anomaly	24	5.6
Twin twin transfusion syndrome	24	5.6
Abortion	8	1.9
Cord prolapse	8	1.9
Still birth	8	1.9

Table 13 shows fetal complications among study patients. Most common complication was low birth weight in 74.88% followed by preterm in 42.8% and NICU admission in 33.5%.

DISCUSSION

The present prospective observational study was conducted in the postgraduate department of Obstetrics and Gynaecology, LD Hospital, an associated hospital of Government Medical College Srinagar over a period of one and a half years from December 2020 to June 2022. There were total 28260 deliveries out of which 215 were twin giving the incidence of 7 per 1000. This is in agreement with the study done by Smits J et al⁷ which showed the twinning rate of 6-9 per thousand. The mean maternal age was 30.8 years with most common age group of 30-34 years which is comparable to the other studies Rizwan N et al⁸ and Yee YJ et al⁹, that bearing children at older age results in multiple gestations. In present study, 61.4% women with twin pregnancy were multipara and 38.6% were primi. This finding is consistent with the study done by Upreti P et al¹⁰ which showed higher frequency of twin pregnancy among multipara. Mean gestational age at the time of delivery was 36.1 with standard deviation of 5.32. In present study most common fetal presentation was vertex-vertex 51.2% and breech-vertex 11.2%, which is consistent with the study done by Madan et al¹¹. In present study dichorionic diamniotic was seen in 66.5%, monochorionic diamniotic in 26% and monochorionic monoamniotic in 7.4% showing dichorionic placentation was most commonly seen which is comparable with the study conducted by Katke RD et al¹². Most of the women were delivered by caesarean section (LSCS) 59.1% whereas 39.1% were vaginally delivered. Most common indication for caesarean section was malpresentation in 45.8%, previous caesarean in 30.5% and fetal distress in 29.8%. Comparable findings of mode of delivery and indication of caesarean section were seen in study conducted by Madan et al¹¹. In our study increased maternal complication was seen and comparable results were found in study conducted by Madan et al¹¹. In our study 74.8% fetuses were low birth weight (<2500 gm), similar results were observed by Singh L et al¹³ where 78.6% were low birth weight. Other fetal complications

observed in our study were preterm in 42.8%, NICU admissions in 33.5%, fetal growth restriction in 10.7%, intrauterine death of one fetus in 7.4%, intrauterine death in both fetuses in 7.4%, fetal anomalies in 5.6%, twin twin transfusion syndrome in 5.6%, abortion in 1.9%, cord prolapse in 1.9% and still birth in 1.9%. In study conducted by Chittachoroen A et al¹⁴ and many others found preterm in 29-54%.

CONCLUSION

Management of twin pregnancies is a challenging task for obstetricians. Twin pregnancy is a significant risk factor for maternal and perinatal morbidity and mortality. Complications associated with twin pregnancies cannot be prevented but can be detected early and controlled adequately by proper and prompt management. 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 fetal and maternal complications together with thorough antenatal visits, has much to its credit in lowering both maternal and fetal complications. The knowledge of maternal and fetal complications helps in better surveillance and prevention of adverse outcome. This clearly indicates the need for screening programs for early detection of twin pregnancies, timely referral, better antenatal care and delivery at institution with good neonatal care unit.

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