

**Maternal and Fetal outcome in Multiple pregnancy****Anita Madan<sup>1</sup>, Jagdeep Kaur<sup>2\*</sup>, Sunita Meena<sup>3</sup>, Anisha Puri<sup>4</sup>**<sup>1</sup>Associate Professor, Department of Obstetrics and Gynecology, GMC Amritsar, Punjab, India<sup>2</sup>Assistant Professor, Department of Obstetrics and Gynecology, GMC Amritsar, Punjab, India<sup>3</sup>Senior Resident, Department of Obstetrics and Gynecology, GMC Amritsar, Punjab, India<sup>4</sup>Associate Professor, Department of Anaesthesiology and Critical Care, Maharishi Markandeshwar (Deemed to be) University, Mullana, Ambala, Haryana, India**Received: 13-10-2020 / Revised: 30-11-2020 / Accepted: 20-12-2020****Abstract**

**Background:** The incidence of multiple pregnancy is increasing day by day. Twin pregnancy is the most common type of multiple gestation. Multiple gestation is problematic both for the mother as well as for her fetuses during antenatal, intranatal and postnatal periods. The prognosis is worse both for the mother and the fetus in multiple gestation as compared to a singleton pregnancy. **Aim and objectives:** To study maternal and fetal outcome in multiple fetal gestations. **Material and methods:** Retrospective observational study was carried out in antenatal women with multiple gestations after 24 weeks of gestation at a tertiary teaching hospital in Punjab over a period of one year. Maternal and Fetal outcomes were analyzed. **Results:** The incidence of multiple gestation in our study was 30.5 per 1000 deliveries. There were 1673 deliveries out of which 51 women had delivered multiple gestation. One woman had triplet pregnancy. There were 103 babies delivered to 51 women. Majority of women were unbooked (64.71%) and in the age group of 21-25 yrs (43.13%). Multiple gestation was more commonly seen in Multigravida (66.67%). Preterm labor (72.55%) was the most common complication observed with majority of the women delivering between 35-37 weeks. Higher rate of LSCS (58.82%) was seen in multiple gestation with most common indication being malpresentation. Majority of fetuses namely 70.59% of first twins and 74.51% of second twins were LBW (1.5-2.5kg). Fetal complications were FGR (14.56%), single fetal demise (1.94%), birth asphyxia (19.42%). There were 20.38% NICU admissions and 17.48% perinatal deaths in our study. **Conclusion:** Incidence of multiple gestation was 30.5 per 1000 deliveries, more seen in younger age group. Preterm labor was the most common complication. Good antenatal care, early detection and treatment of maternal complications and good NICU care can improve both maternal and fetal outcome.

**Keywords :** Multiple gestation, Maternal and fetal outcome.

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**Introduction**

Incidence of multiple births has been rising steadily for the past 30 yrs [1]. The incidence of multiple births in 1980 was 18.9/1000 live births and in 2008 was 32.6/1000 live births [2]. Multiple pregnancy is a challenge for obstetricians globally. Increasing use of Artificial Reproductive Techniques (ART) and the

increasing maternal age, is contributing to the increasing trend of multiple pregnancies [3].

Currently prevalence of multiple pregnancies accounts for 32/1000 (3.2%) of births globally [4]. Multiple pregnancies are associated with increased risk of obstetric complications as well as perinatal morbidity and mortality in developing countries.

Maternal complications like anaemia, preeclampsia, gestational diabetes, antepartum haemorrhage (APH), polyhydramnios and operative delivery are common. Poor perinatal outcome due to complications in babies like prematurity, low birth weight, fetal growth restriction, Twin-to-twin transfusion syndrome (TTTS),

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Twin reversed arterial transfusion (TRAP), single fetal demise, congenital anomalies, discordant twins, conjoint twins, birth asphyxia, birth trauma and still birth are seen frequently. Fetal complications are reported to be more in monozygotic as compared to dizygotic pregnancies.

**Aim and objectives:** To study Maternal and fetal outcome in multiple fetal gestations.

**Material and Methods:** Retrospective study carried on all women who delivered twin or higher order after 24 weeks of gestation at a tertiary teaching hospital in Punjab over a period of one year. Maternal and Fetal

## Results

**Table 1: Types of cases**

Booking status	No. of cases(n=51)	Percentage(%)
Booked	18	35.29
Unbooked	33	64.71
Total	51	100

In the present study, more women with multiple pregnancy are unbooked who were referred from peripheral hospitals or reported directly. 35.29% were booked cases and 64.71% were unbooked cases (Table - 1). This may be due to the fact that this hospital is a tertiary level hospital which receives referrals from peripheral hospitals

**Table 2: Analysis of maternal age**

Age in years	No of cases(n=51)	Percentage(%)
<=20	4	7.84
21-25	22	43.13
26-30	19	37.25
31-35	4	7.84
>35	2	3.92
Total	51	100

The incidence of multiple gestation in the age group of 20 years and less was 7.84%, between 21-25 years was 43.13%, between 26-30 years was 37.25% and between 31-35 was 7.84%. Multiple gestation cases reported in age group more than 35 years was least (6%). This shows maximum cases were in the age group of 21-25 years and next were between age group of 26-30 years, which was due to high fertility in this age group. (Table 2)

**Table 3: Analysis of parity**

Parity	No. of cases(n=51)	Percentage(%)
Primigravida	17	33.33
G2	14	27.45
G3	11	21.57
G4 and above	9	17.65
Total	51	100

Incidence of multiple pregnancy in relation to parity was as per Table 3. 17 cases (33.33%) were Primigravida, 14 cases (27.45%) were Second gravida, 11 cases (21.57%) were Third gravida and Fourth

outcomes were analyzed. Maternal details like age, parity, fertility drugs and assisted reproductive technology, family history of twinning, gestational age at the time of delivery and mode of delivery were noted. Details of complications that occurred during antenatal period, labour as well as the after delivery were also taken into account and analysed. Fetal outcome was analyzed in terms of birthweight, NICU admissions and perinatal deaths.

**Exclusion criteria:** Mothers with singleton pregnancy and multiple pregnancy before 24 weeks.

gravida and above were 9 cases (17.65%). As is clear from the table, multiple gestation is seen more commonly in multigravidas (66.67%).

**Table 4: Analysis of period of gestation at the time of delivery**

Period of gestation (POG)	No. of cases(n=51)	Percentage (%)
<28 weeks	2	3.92
28-32 weeks	9	17.65
32-35 weeks	14	27.45
35-37 weeks	18	35.29
>37 weeks	8	15.69
Total	51	100

Analysis of cases as per the period of gestation(POG) at the time of delivery, only 2(3.92%) cases delivered at extremely preterm at less than 28 weeks POG. Very preterm (28-32weeks) was in 9 (17.65%), moderate preterm (32-35weeks) was in 14 (27.45%) and late preterm (35-37 weeks) was in 18(35.29%). More than 37 weeks was in 8(15.69%). As is clear from the table ,majority of patients with multiple gestation delivered between 35-37 weeks followed by 32-35 weeks. (Table 4)

**Table 5: Analysis of fetal presentation in multiple pregnancy**

Fetal presentation	No of cases(n=51)	Percentage(%)
Vertex-vertex	16	31.37
Vertex-breech	10	19.61
Vertex-transverse	2	3.92
Vertex-breech-vertex	1	1.96
Breech-breech	8	15.69
Breech-vertex	10	19.61
Breech- transverse	3	5.88
Transverse-breech	1	1.96
Total	51	100

Analysis of fetal presentation in twin pregnancy as per table 5. Most common combination of presentation of twins in the present study was Vertex-Vertex 16 (31.37%), next common presentation was Vertex-Breech 10 (19.61%), Breech- Breech 8(15.69%),

Breech - Vertex 10(19.61%), Breech – Transverse 3(5.88%), Vertex – Transverse 2(3.92%), transverse – Breech 1(1.96%). Presentation in triplet pregnancy was vertex-breech-vertex in 1(1.96%) case only.(Table 5).

**Table 6: Analysis of chorionicity**

Chorionicity	No of cases(n=51)	Percentage(%)
Monochorionic	20	39.22
Dichorionic	30	58.82
Trichorionic	1	1.96
Total	51	100

Monochorionic Twins were in 20 cases (39.22%) and Dichorionic Twins were 30 cases (58.82%). In our study , we found only one woman with Trichorionic triamniotic triplet(1.96%). (Table 6).

**Table 7: Mode of delivery**

Mode of delivery	No of cases(n=51)	Percentage(%)
Vaginal delivery	21	41.18
Caesarean delivery	30	58.82
Total	51	100

Analysis of mode of delivery as per Table 7. Out of 51 women, 21(41.18%) delivered by vaginal delivery and 30(58.82%) women delivered by caesarean delivery. The woman with triplet pregnancy delivered by vaginal delivery at 28 wks 5 days period of gestation as she already came in advanced labour.

**Table 8:Indication of caesarean**

Indication	No of cases(n=51)	Percentage(%)
Malpresentation	15	50
Previous caesarean	11	36.67
Antepartum haemorrhage	1	3.33
Fetal distress	2	6.7
Abnormal labour	1	3.33
Total	30	100

Analysis of cases as Indication of caesarean as per Table 8. Most common indication was malpresentation in 15(50%) cases. Previous caesarean was in 11(36.67%) cases and fetal distress was in 2(6.75) cases. Antepartum haemorrhage and abnormal labour was in 1(3.33%) case.

**Table 9 : Analysis of birth weight of babies (in Kgs)**

Birth weight	1 <sup>st</sup> baby		2 <sup>nd</sup> baby		3 <sup>rd</sup> baby	
	No of babies	Percentage (%)	No of babies(n)	Percentage (%)	No of babies(n=)	Percentage (%)

	(n=51)		(=51)		51)	
Normal (>2.5kg)	4	7.84	3	5.82		
LBW (1.5-2.5kg)	36	70.59	38	74.51		
VLBW (1-1.5kg)	9	17.65	7	13.73		
ELBW(<1kg)	2	3.92	3	5.88	1	1.96
Total	51		51		1	

Analysis of baby weight in twin pregnancy as per Table 9, most of babies were low birth weight (LBW). 36 (70.59%) first babies were LBW whereas 38 (74.51%) second babies were LBW. 10 (17.65%) first babies and 7 (13.73%) second babies were Very low

birth weight (VLBW). Extreme low birth weight was in 2 (3.92%) first babies, 3 (5.88%) second babies and one third baby of triplet pregnancy. A very important observation was only 4 (7.84%) first babies and 3 (5.82%) second babies were of normal birth weight.

**Table 10: Maternal complications in twin pregnancy**

Antenatal maternal complication	No of cases(n=51)	Percentage(%)
Anaemia	32	62.74
Gestational hypertension Pre-eclampsia	8	15.68
Eclampsia	1	1.96
Polydromnios/Oligohydramnios	8	15.68
Preterm labour	37	72.55
PPROM	12	23.53
Antepartum haemorrhage	3	5.88
Gestational diabetes	7	13.73
Thyroid disorders	9	17.65
Other associated medical complication	5	9.80
Postnatal maternal complication		
Post partum haemorrhage	5	9.80

In this study, antenatal maternal complications like anemia was 62.74%, gestational HTN & preeclampsia were 15.68%, eclampsia was 1.96%, amniotic fluid abnormality was 15.68%, preterm labor was 72.55% and antepartum haemorrhage was 5.88%. Pre-term labor in the present study was most common complication (72.55%) which was due to over distension of uterus. Premature prelabour rupture of

membrane(PPROM) was in 12(23.53%) cases. Thyroid disorders in 9(17.65%) cases. Gestation diabetes mellitus was in 7(13.73%) cases. Other associated medical complication like deranged liver function and epilepsy were in 5(9.80%) cases. Post partum haemorrhage (PPH) was found in 5(9.80%) cases.(Table 10)

**Table11: Fetal complication**

Fetal complication	No of baby(n=103)	Percentage(%)
Single fetal demise	2	1.94
Perinatal death	18	17.48
Birth asphyxia	20	19.42
Fetal growth restriction	15	14.56
NICU Admission	21	20.38
Congenital anomaly	1	0.97

Table 11 shows analysis of fetal complications. Out of 103 total babies delivered, 2(1.94%) were single fetal demise, 15(14.56%) babies were FGR, 20(19.42%) babies had birth asphyxia. There were 21 (20.39%) NICU admissions and 18(17.48%) perinatal deaths in our study.

Our study was carried out retrospectively in a tertiary level hospital over a period of one year during which there were total 1673 deliveries and 51 women who delivered multiple gestation giving the incidence of 30.5 per 1000 deliveries. This rate in our study is much higher than the incidence of twins in India which is around 1% in most studies. The incidence of Peter B. L. et al[5] from Dar Es Salaam Nigeria and Yakasai I.A. et al[6] from Nigeria were 20 and 22.89 per 1000

## Discussion

deliveries respectively which were lower than our study. This can be explained partly because our study represents mostly referred cases to our tertiary hospital in Punjab. This also explains the higher percentage of unbooked patients (64.71%) in our study. Our study group included 1 (1.96%) woman with triplet pregnancy at 28 weeks 5 days who delivered vaginally as she came in advanced labor. There were total 103 babies delivered to 51 women with multiple gestation. The incidence of multiple gestation highest in the age group of 21-25 years and between age group of 26-30 years, which was due to high fertility in this age group. Age distribution in our study was similar to that with Bangal et al[7], Irene Y.V[8], Sultana, M[9] and Ara A. et al[10] i.e. majority of cases were young i.e. in the 20-30 yrs age group. However Rizwan et al[11] found a greater number of women in age group above 30 years. Highest incidence of twin pregnancy in relation to parity was in Primigravida (33.33%). majority of patients with multiple gestation delivered between 35-37 weeks followed by 32-35 weeks. Most common combination of presentation of twins in the present study was Vertex-Vertex 16 (31.37%), next common presentation was Vertex-Breech 10 (19.61%). Triplet pregnancy was with Vertex-Breech-Vertex. Out of 51 twin pregnancy 20 (39.22%) were monochorionic whereas 31 (60.78%) were Dichorionic and one was Trichorionic. Mahmut et al[12] found incidence of dichorionicity was 69.3% and monochorionicity was 30.7%. Similar data also found in Singh L. et al study[13]. Out of 51 women, 21 (41.18%) delivered by vaginal delivery and 30 (58.82%) women delivered by caesarean delivery. Bangal et al[7] reported the caesarean section rate to 33% which is lower than our study. The increase of cesarean section may be due to increased incidence of other obstetric indications for cesarean deliveries. Most common indication for caesarean delivery was malpresentation in 15 (50%) cases. Previous caesarean delivery was in 11 (36.67%) cases and fetal distress was in 2 (6.75) cases. Most of babies were LBW, 36 (70.59%) first babies were and 38 (74.51%) second babies. 10 (17.65%) first babies and 7 (13.73%) second babies were VLBW. Extreme low birth weight was in 2 (3.92%) first babies, 3 (5.88%) second babies and one third baby of triplet pregnancy. Only 4 (7.84%) first babies and 3 (5.82%) second babies were of normal birth weight. Antepartum haemorrhage and abnormal labour was in 1 (3.33%) case. In our study pre-term labor was most common complication (72.55%) which was due to over distension of uterus. Next was anemia in 62.74%, gestational HTN & preeclampsia were in 15.68%, PPROM was in 12 (23.53%), APH in 5.88% and Post partum haemorrhage

was observed in 5 (9.80%) cases. Maternal complication compared with Bangal et al[7] study they found PROM in 16%, anemia in 66% and APH in 8% patients. Another study was done by Rizwan N, et al[11] they found PROM and preterm labor in 84.4%, PIH in 31.2%, anemia in 65.6%, APH in 6.2%, PPH in 12.5%. In India, twin pregnancies complicate 1% of pregnancies and are the cause of 10% of perinatal mortality [14-16]. In our study NICU admissions were found in 20.39% of babies and there were 17.48% perinatal deaths. Bangal et al[7], Sultana M. et al[9], Ara A[10] and Rizwan et al[11] reported higher stillbirth rates. However Irene Y.V. et al[8] reported very low still birth rates.

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**Conflict of Interest: Nil**

**Source of support:Nil**