



Fetomaternal Outcome in Twin Pregnancy

Khushbu Rajeshkumar Kundariya¹, Jagruti Monal Shah², Bhavna Natavarlal Mewada³, Mayank Mukeshbhai Shah⁴, Akash Sureshbhai Patel⁵

Received on: 25 August 2022; Accepted on: 06 October 2022; Published on: 31 January 2023

ABSTRACT

Introduction: Multiple pregnancies are considered high-risk pregnancy. The commonest being twin pregnancy. It can lead to many maternal and perinatal complications. The global twinning rate has increased by a third, due to the dramatic increase in use of ovulation-induction drugs, IVF, and delayed marriages. To minimize the risks, patients with multiple pregnancies require close monitoring and frequent follow-up.

Aim: To evaluate maternal and perinatal complications and pregnancy outcomes in women with twin pregnancies.

Materials and methods: This is a retrospective observational study conducted in Municipal General Hospital and Medical College, Ahmedabad. During this study period of 2 years, there were a total of 10,682 deliveries, which include 142 women with twin pregnancies. We studied maternal factors like age, parity, complications, mode of delivery, and perinatal morbidity and mortality.

Results: The incidence of twins in this study was found to be 1.32%. The most common maternal age was 20–25 years (mean age – 23.7) and higher incidence in multiparous women. Women with spontaneous conception – 96.4%. The most common fetal presentation was cephalic–cephalic presentation (59.5%). The commonest maternal complications were preterm (83.8%) and anemia (41.5%). Mode of delivery in our study 44.5% being vaginal birth and 55.6% women underwent lower segment cesarean section (LSCS). Neonates with birth weight less than 2.5 kg were 91.9%. Perinatal mortality was 11%.

Conclusion: Twin gestation necessitates special attention as they contribute to maternal and fetal morbidity and mortality. Regular antenatal visits, adequate rest, administration of steroids, good nutrition, intensive neonatal care, and good health services can give fruitful outcomes.

Keywords: Maternal death, Maternal and perinatal outcome, Obstetric complications, Perinatal outcome, Pregnancy-induced hypertension, Preterm labor.

Journal of South Asian Federation of Obstetrics and Gynaecology (2022): 10.5005/jp-journals-10006-2149

INTRODUCTION

Multiple pregnancies are defined as more than one fetus simultaneously developing in the uterus. The most common is twin pregnancy where simultaneous development is of two fetuses in the uterus.

Twinning is a result of fertilization of two separate ova (dizygosity), however, about one-third of cases arise from division of a single ovum into two separate embryos (monozygosity). The incidence of twin pregnancy varies globally among which the incidence of monozygotic twins is fixed – 1:250.¹ The incidence of dizygotic twins varies depending on multiple factors such as higher-order pregnancies, H/o multiple pregnancies in the family especially maternal side, good nutrition status of the mother, and certain race (Africans>Japanese). Since the 1980s, the global twinning rate has increased by a third, from 9.1% to 12% twin deliveries per 1,000 deliveries. About 1.6 million twin pairs deliver every year.² This is due to the dramatic increase in use of ovulation-induction drugs, IVF, and delayed marriages.

Multiple pregnancies are considered high-risk pregnancies, leading to many perinatal complications like prematurity (most common), intrauterine growth restriction (IUGR), discordant twins, and twin-to-twin transfusion syndrome, and it is responsible for approximately 10–12.1% of perinatal mortality.³ Maternal complications are like pregnancy-induced hypertension (PIH), gestational diabetes mellitus (GDM), postpartum hemorrhage (PPH), etc. To minimize the risks, patients with multiple pregnancies require close monitoring, frequent follow-up, and timely management.

^{1,3,4}Department of Obstetrics and Gynaecology, Smt NHL Municipal Medical College, Ahmedabad, Gujarat, India

²Department of Obstetrics and Gynaecology, VS General Hospital, Ahmedabad, Gujarat, India

⁵Department of Obstetrics and Gynaecology, Smt SCL Municipal General Hospital, Ahmedabad, Gujarat, India

Corresponding Author: Khushbu Rajeshkumar Kundariya, Department of Obstetrics and Gynaecology, Smt NHL Municipal Medical College, Ahmedabad, Gujarat, India, Phone: +91 7984996014, e-mail: khushi1911kundariya@icloud.com

How to cite this article: Kundariya KR, Shah JM, Mewada BN, *et al.* Fetomaternal Outcome in Twin Pregnancy. *J South Asian Feder Obst Gynae* 2022;14(6):663–666.

Source of support: Nil

Conflict of interest: None

METHODS

This is a retrospective observational study conducted in tertiary care hospital named SCL General Hospital and Municipal Medical College, Ahmedabad, over a period of 2 years from March 2020 to February 2022. There are a total of 10,682 deliveries during the study period, which includes 142 females with twin pregnancies. All twin pregnancies delivered in LR after the age of viability were included in the study. Their detailed history was taken including parity, age, fetal presentation, mode of delivery, gestational age, etc., all routine and specific investigations were done and the final

Table 1: Demographic profile

	Number of twin pregnancies	Percentage of twin pregnancies
Age		
20–25 years	86	61%
26–30 years	37	26%
>30 years	19	13%
Total	142	Mean age – 23.7 years
Parity		
Primi	55	38.7%
Multi	87	61.3%
Total	142	
Mode of conception		
Spontaneous conception	138	97.2%
Maternal history	3	2.1%
Past history	1	0.7%
Conception by ovulation induction	4	2.8%
Total	142	
Gestational age (weeks)		
>24–28 + 6	9	06.3%
29–31 + 6	22	15.5%
32–36 + 6	88	62.0%
>37	23	16.2%
Total	142	Mean gestational age – 33.4 weeks

fetomaternal outcome was noted. Appropriate statistical methods were applied. The analyzed data were compared with different studies and discussed.

Inclusion Criteria

- Twin gestation with more than or equal to 24 completed weeks.
- All women booked or unbooked are delivered in our hospital.

Exclusion Criteria

- Women with gestational age less than 24 weeks.
- Women with more than two fetuses (triplets, quadruplets).

RESULTS

This is a retrospective study of 142 women with twin pregnancies in our tertiary care hospital over a period of 2 years during March 2020 to February 2022. All data collected, tabulated, and analyzed are shown as below.

The distribution of maternal demographic data is shown in [Table 1](#). Large numbers of women 86 (61%) with twin gestation were between 21 and 25 years of age and mean age of 23.7 years. Twin gestation was observed as most common in multiparous 87 (61.3%). Most of them (97.2%) had conceived spontaneously, in these, 3 women had maternal history of twins. Most women completed 32–(36 + 6) weeks of gestation 88 (62%), and mean gestational age was 33.4 weeks. Full-term deliveries were found in 16.2%.

Table 2: Distribution of women with twin pregnancy by fetal presentation and mode of delivery

	ND	CS	Total	Percentage
Cephalic–cephalic	45	39	84	59.5%
Cephalic–breech	12	20	32	22.5%
Cephalic–transverse	1	4	5	3.5%
Breech–cephalic	4	10	14	9.8%
Breech–breech	1	5	6	4.2%
Breech–transverse	0	1	1	0.7%
Total	63 (44.5%)	79 (55.6%)	142	

Table 3: Maternal complications

	Number	Percentage
Preterm	110	77.4%
Extreme preterm (<28 weeks)	9	(6.3%)
Anemia	59	41.5%
Mild anemia (10–10.9)	22	(15.4%)
Moderate anemia (7–9.9)	28	(19.7%)
Severe anemia (<7)	9	(6.3%)
PIH	17	12%
APH	6	4.2%
PPH	3	2.1%
GDM	3	2.1%
Polyhydramnios	9	6.3%
Oligohydramnios	4	2.8%
Eclampsia	1	0.7%
No complication	17	12%

Preterm labor is one of the most common obstetrical complications among twin delivery and a major cause of neonatal morbidity and mortality.

As shown in [Table 2](#), most common presentation was cephalic–cephalic 84 (59.5%) followed by cephalic–breech 32 (22.5%). More than 50% cephalic–cephalic presentations were delivered by vaginal birth. The most frequent mode of delivery was LSCS 79 (55.6%). Malpresentation was the most common factor for LSCS.

[Table 3](#) shows maternal complications in twin pregnancies. We noted that 110 (77.4%) had preterm deliveries and 45 women (41.5%) with anemia. Out of this, 9 (6.3%) patients had severe anemia. Other complications include 17 (12%) with pre-eclampsia, however, only 1 (0.7%) patient had eclampsia. Gestational diabetes mellitus was found in 3 (2.1%) women. Antepartum hemorrhage was found in 6 (4.2%) women. Extremely preterm babies were 9 (6.3%).

[Table 4](#) shows baby weight at the time of birth. In total, 124 (43.6%) of babies were having birth weights of 1.6–2 kg. Extremely low birth weight, less than 1 kg, was found in 15 babies (5.3%). Restricted growth and preterm delivery are more important causes of increased incidence of low birth weight in twin pregnancy. In our study, incidence of perinatal mortality was 11%. Out of 31 perinatal mortalities, 7 were IUFD.

Table 4: Neonatal weight, complication, and outcome

Birth weight (kg)	Number	Percentage
<1	15	5.3%
1–1.5	59	20.7%
1.6–2	124	43.6%
2.1–2.5	63	22.2%
>2.5	23	8.1%
NICU admission	176	62%
Neonatal mortality	31	11%
IUFD (SFD + fetus papyraceous)	10 (7 + 3)	3.5%

presentation in this study was vertex–vertex 84 (59.5%) followed by vertex–breech 32 (22.5%).

Our study showed that common maternal complications associated with twin pregnancy were preterm deliveries 119 (83.8%), anemia 59 (41.5%), and PIH 17 (12%). Pregnancy-induced hypertension is due to overexposure to chorionic villi. A study conducted by Kumari et al.¹⁰ showed anemia in 26.8% women. Dubey et al. reported 70% incidence of preterm delivery.¹¹

The incidence of having low-birth-weight (<2.5 kg) baby in our study was 91.9%. In the study done by Shobha Rani, 87.2% babies were low birth weight.⁵ NICU admissions were required in 176 (62%) of cases. There was 11% perinatal mortality in our study as compared with Gajera et al. study reporting 6.5% perinatal mortality.¹² Majority

Table 5: Comparative analysis of different studies on twin pregnancy

	Present study	Shobha Rani et al.	Singh et al.	Pant et al.	Smitha and Jasiya Afreen
Age					
(20–25 years)	(61%)	(77.14%)	–	–	
Parity					
Multipara (>1)	(61.3%)	–	(70.67%)	(51.85%)	(53%)
Gestational age (>32–36 weeks)	(62%)	(40%)	–	–	(56.5%)
Maternal complications					
Preterm	83.8%	57.1%	74.7%	–	–
Anemia	41.5%	40%	44%	–	–
PIH	12%	28.5%	32%	–	–
NICU admission	62%	62.3%	34.6%	–	86.53%

DISCUSSION

Twin pregnancy is considered a high-risk pregnancy as it has several maternal and perinatal complications. Twinning rate in this study was 13.2/1,000 births. Higher incidence of twin pregnancy may be due to our institute being a tertiary care hospital and higher number of women are referred from other centers.

Studies conducted since the 1970s showed maternal twinning rate at 9–16/1,000 births.⁴ The last two decades, due to assisted reproductive techniques, have seen an explosion in the number of multiple gestation pregnancies. In our study, 138 (97.2%) had spontaneous conception and 4 (2.8%) had maternal history of ovulation induction.

We observed common age group of 20–25 years 86 (61%) and mean age of 23.7 years. The least number of women were above 30 years 19 (13%). A similar conclusion was drawn in a study by Shobha Rani, in which, 77.14% cases of twin pregnancy were found in the age group of 20–25 years.⁵ Multigravida were 87 (61.3%) in our study, which is also observed by Singh et al. that twins were more common in multigravida (70.7%)⁶ and Pant et al. (56%)⁷ (Table 5).

In spite of good antenatal care, 31 (21.7%) were delivered before 32 weeks of gestation. Only 23 (16.2%) were delivered after 37 weeks of gestation. The incidence of preterm delivery was higher at 83.8% in the current study similar to Mathew et al. incidence that was higher (64.4%).⁸ The most common mode of delivery in this study was LSCS 79 (55.6%), consistent with studies by Smitha and Jasiya Afreen (64.6%).⁹ The most commonest

of these babies were preterm and had complications like IUGR, birth asphyxia, septicemia, RDS, etc.

CONCLUSION

Twin gestation necessitates special attention as they contribute to maternal and fetal morbidity and mortality. Moreover, these complications are higher when twins are delivered at earlier gestational age. High-risk cases should be identified early and managed timely. Regular antenatal visits, adequate rest, administration of steroids, good nutrition, intensive neonatal care, and good health services can give fruitful outcomes.

ORCID

Bhavna Natavarlal Mewada  <https://orcid.org/0000-0002-1281-3186>

Mayank Mukeshbhai Shah  <https://orcid.org/0000-0002-2812-3374>

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