

A Cross Sectional Study of Maternal and Perinatal Outcomes in Twin Pregnancy in a Tertiary Care Center

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Abstract

Background: Multiple pregnancies are linked to higher maternal and foetal risk; as a result, they need special consideration. The purpose of this study was to assess the perinatal outcome and pregnancy problems in twin pregnancies.

Methods: From November 2021 to October 2022, a cross-sectional study was conducted on all twin births at the Darbhanga Medical and Hospital, Obstetrics and Gynecology Department, Laheriasarai, Bihar. There were 120 births of twins. Analysis was done on maternal information, prenatal problems, and foetal outcome.

Results: The age range of 20 to 29 years and multigravida had the highest prevalence of twin pregnancies at 2.09%. The most frequent foetal presentation was vertex-vertex. The most common delivery method was a caesarean section (76.6%). The most frequent maternal consequence was preterm labour (75%), which was followed by anaemia (60%). Birth hypoxia (35%), intrauterine growth restriction (13.3%), hyperbilirubinemia (10%), and newborn sepsis (3.3%) were perinatal complications. The LBW status of the newborns was 85%. In our study, perinatal mortality was 15%.

Conclusion: Improved mother and newborn outcomes in twin pregnancies will result from the utilisation of antenatal care services, the detection and anticipation of problems, intrapartum management, and appropriate NICU facilities.

Keywords: Twin Pregnancy, Maternal Outcome, Perinatal Outcome, Preterm Labour.

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Introduction

When two or more babies are conceived at the same time in the same woman, multiple gestations or multiple pregnancies can occur. These pregnancies can be monozygotic or dizygotic. The risk factors for births after multiple gestations have a long history. They include the use of reproductive therapy, race, advanced age, serum oestradiol

concentration, and the presence of twins in the family. Today, multiple births are a lot more prevalent than they used to be. The use of ovulation inducing drugs, assisted reproductive technologies, and a trend towards having children at older maternal ages, when multiple gestation are more likely to occur naturally, have all been linked to the dramatic increase in the incidence of multiple

gestation, especially higher order multiple gestation [1]. Despite being present in just one in every 80 pregnancies, twins are responsible for 12.2% of preterm births and 15.4% of neonatal fatalities. Approximately 50% of twins are born with a birth weight of less than 2,500g (5.5 lb). Nonetheless, compared to very small single births, very small twin babies have higher survival rates. Nowadays, survival chances for identical twins with twin to twin transfusion syndrome are substantially higher due to early discovery and laser treatment, which is carried out in a few hospitals that specialise in this surgery. Twin to twin transfusion syndrome is a rare but potentially deadly condition [2].

Miscarriage, pre-eclampsia, APH, PPH, iron and folic acid deficiency anaemia, polyhydramnios, preterm labour, PROM, and an increased rate of caesarean section are all risks associated with many pregnancies for the mother. Pre-eclampsia is 2-3 times more common and probably more severe in multiple pregnancy than in singleton pregnancy [3]. Every woman carrying high order multiples should get counselling regarding the risks of carrying the pregnancy to term, the likely course of treatment, and the possibility of multifetal pregnancy reduction (MFPR). In tertiary perinatal centres with a foetal medicine service, higher order multiple pregnancies should be addressed [4].

Material and Methods

The study included all twin-pregnant women admitted to the labour ward after 28 weeks of gestation. The study excluded women whose gestational ages were fewer than 28 weeks. This observational study was conducted from November 2021 to October 2022 over a one-year span. The following demographic data were collected: gestational age at presentation, booked or unbooked; parity; history of infertility therapy; family history of twin pregnancies; any prior twin

pregnancies; prenatal admissions; and antenatal complications. To identify any related problems such as anaemia, hypertension, and jaundice, a general physical examination was conducted. In order to identify the present part, an abdominal examination was performed. The lie, position, size, and relationship to the birth canal and FHS were noted. In order to record PROM and antepartum haemorrhage, as well as the stage of labour, presentation, state of the membranes, and the sufficiency of the pelvis, a pelvic examination was performed.

Neonatal outcomes covered gestational age at birth, birth weight, stillbirth, death before discharge, live birth, discharged alive, presence of respiratory distress syndrome (RDS), need for mechanical ventilation, APGAR score, length of hospital stay, and maternal outcomes covered use of induction of labour, mode of delivery, primary or major postpartum haemorrhage, and postpartum pyrexia. Maternal complications (such as anaemia, preterm labour, pregnancy-induced hypertension, postpartum haemorrhage, etc.), perinatal morbidity, and mortality were the primary outcome measures. SPSS-16 was used to analyse the data.

Results

122 patients appeared with multiple pregnancies out of the 5719 prenatal patients who were delivered during the course of a year, from November 2021 to October 2022, in our hospital. Among these, 2 had triplet pregnancy and was excluded from our study and remaining 120 were cases of twin pregnancy. In our study, the likelihood of having twins was 2.09%. Table 1 displays the distribution of cases in relation to the sociodemographic profile of the mother. The majority of women (70%) were between the ages of 20 and 29, which is when fertility peaked. 36.6% of primi gravidas and 63.3% of multi gravidas had twins. Women who were registered for antenatal care made up

68.3% of those who frequently attended the antenatal clinic, compared to 31.6% of those

who did not. Only 83.3% of pregnant women delivered before 37 weeks (Table 1).

Table 1: Demographic and Obstetric profile of the patients (n=120)

Maternal Profile	No. of cases	Percentage
Age distribution		
1. <20 years	8	6.6%
2. 20-29 years	84	70.0%
3. 30-35 years	16	13.3%
4. >35 years	12	10.0%
Parity distribution		
5. Primi	44	36.6%
6. Multi	56	63.3%
Registration status		
7. Booked	82	68.3%
8. Unbooked	38	31.6%
Gestational age		
9. <28 weeks	6	5.0%
10. 28-32 weeks	16	13.3%
11. 32-37 weeks	78	65.0%
12. >37 weeks	20	16.6%

60% of women were dichorionic in terms of chorionicity. Six percent of patients were monochorionic monoamniotic, while 14% were monochorionic -diamniotic. In 20% of cases, chorionicity was unknown. The most frequent foetal presentation at delivery (52% of patients) was vertex-vertex (Vx-Vx), which was followed by breech-vertex (B-Vx) in 18% of women.

Women delivered vaginally in 23.3% of cases, while 76.6% underwent caesarean sections. For foetal malpresentations, 31.6% of the caesarean sections were electively done. Fetal discomfort, antepartum haemorrhage, cord issues, lack of progress in labour, and the second twin all required emergency sections. In 60% of cases, anaemia was found. 35% of women had hypertension brought on by pregnancy (Table 2).

Table 2: Maternal outcome

Maternal Complication	No. of cases	Percentage
Preterm labour	90	70.0%
HDOP	42	35.0%
Malpresentation	38	31.6%
Anemia	72	60.0%
Hydramnios	8	6.6%
APH	4	3.3%
PROM	16	13.3%
GDM	2	1.6%
Caesarean section	92	76.6%
PPH	10	8.3%

In our study, low birth weight (LBW) was characterised as birth weight of <2.5 kg, and 85% of the infants were LBW. 63.3% of babies had an APGAR score of less than 7 at 1 minute. At 10 minutes, 66.6% of neonates had an apgar score <7. The majority of early newborn deaths were caused by prematurity and low birth weight. The NICU was required in 24 cases of hyperbilirubinemia, septicemia, 84 cases of respiratory distress, 32 cases of intrauterine growth restriction, and 32 cases of very tiny babies (144 cases). In our study, perinatal mortality was 15%. (Table 3).

Table 3: Fetal outcome

Fetal outcome	No. of cases	Percentage
Birth weight		
13. <1 kg	12	5.0%
14. 1-1.5 kg	38	15.8%
15. 1.6-2.5 kg	154	64.1%
16. >2.5 kg	36	15.0%
NICU Admission	144	60.0%
RDS	84	35.0%
IUGR	32	13.3%
Hyper-bilirubinaemia	24	10.0%
Septicaemia	8	3.3%
Perinatal mortality	36	15.0%
APGAR <7 at 1 min	152	63.3%
APGAR >7 at 10 min	160	66.6%

Discussion

High risk pregnancies like twin pregnancies necessitate specialised treatment and a multidisciplinary approach to management. In our analysis, the rate of twin pregnancies was 1.4%; potential causes for the increase in this rate include referrals to our hospital for improved newborn care in anticipation of neonatal problems. It was noted that these twin pregnant ladies, regardless of their proximity to home or parity, attended their prenatal appointments on a regular basis. Also, it was found that twin pregnancies had much greater rates of anaemia, hyperemesis, gestational diabetes, and pregnancy-induced hypertension than singleton pregnancies. 70% of the women in this study were between the ages of 20 and 29. This is in line with a study by Spellacy *et al.*, where 55% of participants were between the ages of 20 and 29 [5]. In our study, 63.3% of the patients had multipara parity, which is comparable with

the findings of Spellacy *et al.*, who reported that 84.2% of the patients had multipara parity.

In 70% of twin pregnancies, conservative therapy, tocolytic medications, and steroids were used prophylactically to prevent preterm labour. Several women in the study were found to have started labour prematurely, resulting in premature births. This observation appears to have happened despite safety measures such as enough sleep, tocolytic injection as a preventative measure, and cerclage. The results of the current study were contrasted with findings from a study that included all twin pregnancies admitted to the Institute of Post Graduate Medicine and Research, Dhaka, which is now known as Bangabandhu Sheikh Mujib Medical University (booked and unbooked cases were taken into consideration for the study). Twin

incidence in primis and multigravidas was 36.6% and 63.3%, respectively. According to the Chaudhary study, multis (64.2%) had twins more frequently than primis (35.8%) [6].

According to Chaudhary *et al*, 44% of twin pregnancies result in premature birth.[6] According to the current study, the incidence is 83.3%. Antenatal ultrasound and postpartum examination of the placenta and membranes were used to detect placentation. In our study, the majority of placentas (60%) were dichorionic, which is comparable to the rates reported by Erdemoglu *et al*. (69.3%) and Panwala *et al*. (63.8%) [7,8]. The most frequent foetal presentation at birth was vertex-vertex (Vx-Vx) in the current study (52%), which was comparable with studies by Chowdhury *et al*. (47.5%) and Panwala *et al*. (51.4%) [8,9]. According to research by Chowdhury and Sultana (49.1% and 56% respectively), lower segment caesarean sections were the most common method of delivery in our study (76.6%) [9,10].

In our study, preterm labour, which occurred in 70% of cases, was found to be the most frequent maternal problem. Our study indicated a high preterm caesarean section rate of 20% and a preterm delivery rate of 70%. This result contrasts with earlier research by Chowdhury, Sultana, and Papićnik, which found that preterm delivery rates were, respectively, 41.5%, 44%, and 50.7% [9-11]. Increased incidence of obstetric and/or medical co-morbidities in our patients, which required early delivery, may be responsible for the study's greater premature delivery rate. Anaemia was the second most prevalent maternal complication in our study, occurring in 60% of patients, compared to 35.8% and 35.5%, respectively, reported by Chowdhury and Brown *et al* [9,12].

As a result, authors indicated that our study had a greater incidence of anaemia.

Nevertheless, Bangal *et al*. (84%) discovered a much greater frequency of anaemia [13]. It was discovered that 36 (6%) of the study twin-bearing mothers had anaemia, 19 (31.6%) had hypertension, and 4 (6.6%) had hydramnios, compared to Chaudhary *et al* findings of 35.8%, 22.6%, and 5.7%, respectively [6]. In contrast to Chaudhary, who reported an incidence of 5.7% of APH and 3.8% of PROM, the incidence of APH and PROM was 2 (3.3%) and 8 (13.3%) [6].

35% of newborns were reported to have birth hypoxia. Second-born twins had a substantially greater prevalence of birth asphyxia (55.5%) than did first-born twins (24.5%). In the current study, hypertensive disorders (PIH/Pre-eclampsia/Eclampsia) were reported in 35% of patients. This is greater than what was noted in cases where it was noted in 22,6% and 18%, respectively [9-13]. The primary recognised causes of prenatal morbidity and mortality are low birth weight and preterm. When gestational age at delivery falls, the prevalence of birth hypoxia, perinatal mortality, and the need for NICU care increases. The current study made the same observation.

Conclusion

Compared to singleton pregnancies, twin pregnancies have higher risk and have more obstetrical difficulties. The most frequent obstetric problem is preterm delivery, and caesarean sections are performed more frequently than regular vaginal deliveries. Obstetricians still face several difficulties in handling twin pregnancies. Improved mother and newborn outcomes in twin pregnancies will result from the utilisation of antenatal care services, the detection and anticipation of problems, intrapartum management, and appropriate NICU facilities.

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