Original Research Paper

Volume - 12 | Issue - 02 | February - 2022 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

Obstetrics & Gynaecology

MATERNAL AND PERINATAL OUTCOME IN TWIN PREGNANCY

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ABSTRACT Twins are rare and special; occurring in about 2% of all pregnancies but the incidence of multiple pregnancies has shown a significant increase over the last decades. The present study aimed to determine the maternal and perinatal outcome in twin pregnancy. **METHOD:** This prospective observational study was conducted in the Department of Obstetrics and Gynaecology at Tertiary Care Hospital in central Mumbai. A total of 101 women with twin pregnancy having gestational age of 26 weeks or more admitted for delivery in the maternity ward of our hospital during the study period from October 2017 to September 2019 were included. **RESULTS:** The incidence of twin pregnancy was 1.81% with maximum incidence in age group of 21-30 years. Most of the patients were multipara 63(62.37%) and average gestation at which twin deliveries occurs was 35.37 weeks. The most frequent mode of delivery was cesarean section (51.48%). Preterm labour was most common maternal complication (53.46%), followed by anaemia (38.61%) and gestational hypertension (24.75%). The most common type of twins was DCDA (60.39%) and most common fetal presentation was vertex-vertex (66.83%). Total perinatal mortality was 10.89%, first twin 7.42%, second twin 3.46%. Low birth weight (90.09%) was the first and prematurity (9.90%) was the second leading cause for perinatal mortality. The incidence of birth asphyxia was 1.98%. Neonatal sepsis noted in one fetus (0.99%). **CONCLUSIONS:** Majority of the twin pregnancy is high risk one. So, early diagnosis, adequate antenatal care, labor management and liberal use of C-section will improve perinatal, maternal outcome.

KEYWORDS : Twin pregnancy, Preterm labour, Anaemia, Mortality.

INTRODUCTION

Development of two foetuses simultaneously in the uterus is termed as twin pregnancy [1]. Twin pregnancies are high risk pregnancies requiring special care and multidisciplinary approach towards their management. The worldwide incidence of multiple pregnancies varies around 2-20 per 1000 births [2]. However the number and rate of twin, triplet and higher order multiple births have also increased in India at an unprecedented pace over the past two decades. This extraordinary increase in multiple births is a public health hazard because such pregnancies are associated with increased risk for both mother and the child [3] and this risk increases with the number of offsprings [4].

The twin pregnancy is known to have more obstetric complications encountered in mothers are anaemia, hyperemesis gravidarum, gestational diabetes, antepartum haemorrhage, polyhydramnios, preterm labour, preterm premature rupture of membranes, pregnancy-induced hypertension, postpartum haemorrhage, etc [5, 6]. All of these factors explain the maternal mortality is approximately 2.5 times higher in twin than in singleton pregnancies. Also twin pregnancy have neonatal complications includes prematurity, low birth weight (LBW), birth asphyxia, birth trauma, intrauterine foetal death and congenital malformations, these are the important factors to explain the reasons of high perinatal mortality in twins [6, 7]. The objective of present study was to describe the maternal and perinatal outcome in twin pregnancies delivered in a tertiary care hospital.

MATERIALS AND METHODS

This prospective observational study was conducted in the Department of Obstetrics and Gynaecology at Tertiary Care Hospital in central Mumbai from October 2017 to September 2019. A total of 101 women with twin pregnancy having gestational age of 26 weeks or more admitted for delivery in the maternity ward of our hospital during the study period were included in the study. All multifetal gestations below 26 week of gestation period and also high order multiple gestations from triplets onwards were excluded from the study.

The patients fulfilling the eligibility criteria were followed from admission to discharge, detailed analysis of the medical report of these cases, both mother and neonates were done. The data included demographic details, parity, gestational age, menstrual history; obstetric histories were noted along with family history of multiple pregnancies if any. Obstetric complications like pregnancy induced hypertension, anaemia, preterm labour, antepartum, intrapartum, postpartum complications, neonatal outcomes, neonatal complications and perinatal mortality were studied. The collected data were compiled and results were analyzed in percentages and proportions.

OBSERVATIONS AND RESULTS

Out of the total 5576 antenatal patients delivered during the study period of two years in our hospital, 101 patients presented with twin pregnancies. Thus, the overall incidence of twin pregnancies was 1.81% of deliveries. The majority of women (66.33%) were in the age group of 21-30 years and mean maternal age at presentation was 24.14 years. Most of them were multipara 63 (62.37%), unbooked (33.66%) and 21.78% cases were referred from peripheral centres. 33.66% had received adequate prenatal care (33.66%). The average gestation at which twin deliveries occurs was 35.37 weeks.

Maximum patients 89 (88.11%) had no known aetiological factors. Family history of twin pregnancy was present only in 3 (2.97%) cases and history of ovulation inducing agent was present in 9 (8.91%) cases .

The most common antenatal maternal complication and the commonest cause for admission in the study was preterm labor (53.46%) followed by anemia (38.61%) and gestational hypertension (24.75%) as shown in table 1. Intrapartum complication of preterm prelabor rupture of membranes (PPROM) was seen in 7(6.93%) cases and postpartum hemorrhage (PPH) was observed in 1(0.99%) case.

Table 1: Incidence of antenatal maternal complications in twin pregnancy

Complications		No. of cases	Total cases (%)
Anemia		39	39 (38.61%)
Preterm labor		54	54 (53.46%)
Hyperemesis gravidarum		02	2 (1.98%)
Polyhydramnios		05	5 (4.95%)
Gestational hypertension	Mild	05	25 (24.75%)
	Moderate	10	
	Severe	10	
Antepartum haemorrhage (APH)	Abruptio placenta	01	2 (1.98%)
	placenta previa	01	

All the patients received daily oral iron and folic acid supplementation. The treatments given to prevent antenatal complications are depicted in figure 1.

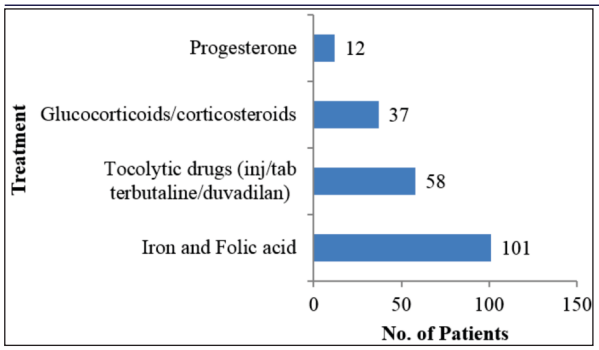

Figure 1: Treatment of antenatal complications

The most frequent mode of delivery was cesarean section (51.48%). Spontaneous vaginal delivery was observed in 48.51% patients. Delivery interval between 1st and 2nd twin was <20 minutes in 85.14% cases. About 49.50% of twins exhibit <15% discordance (concordant), 35.64% were 15-25% (mildly) discordant, and about 14.85% were more than 25% (severely) discordant. The most common type of twins in the study was DCDA accounting to 60.39%, followed by MCDA twins and a very few MCMA twins.

Table 2 shows the birth record of fetuses and perinatal outcome in twins. Maximum percentage of twins had birth weight between 2kg-2.5Kg. Mean weight of first twin was 2.39±0.52kg and for second twin it was 2.03±0.51kg. Vertex-vertex presentation at delivery was most common fetal presentation (66.83%). According to mode of delivery most of the cases of twin pregnancy delivered by cesarean section. The prematurity was the most common post natal complication in both the fetus. Total perinatal mortality was 10.89%. The mortality among 1st fetus was 7.42% while among 2nd fetus it was 3.46%.

Table 2: Birth Record Of 1st And 2nd Fetus As Well As Neonatal Outcome (n=202)

Birth record and outcome		1st fetus	2nd fetus
Mode of delivery	LSCS	63 (31.18%)	66 (32.67%)
	Vaginal	38 (18.81%)	35 (17.32%)
Presentation	Breech	29 (14.35%)	32 (15.84%)
	Transverse	02 (0.99%)	04 (1.98%)
	Vertex	70 (34.65%)	65 (32.17%)
Birth weight	< 1kg	13 (6.43%)	12 (5.94%)
	1- 1.5kg	29 (14.35%)	30 (14.85%)
	1.5- 2kg	07 (3.46%)	08 (3.96%)
	2- 2.5kg	44 (21.78%)	39 (19.30%)
	> 2.5kg	08 (3.96%)	12 (5.94%)
Sex	Female	75 (37.12%)	45 (22.27%)
	M ale	26 (12.87%)	56 (27.72%)
Post natal complications	Prematurity	10 (4.95%)	10 (4.95%)
	Neonatal sepsis	01 (0.49%)	00 (0.00%)
	Asphyxia	00 (0.00%)	02 (0.99%)
	Expired	15 (7.42%)	07 (3.46%)

DISCUSSION

The incidence of twin pregnancies in present study was 1.81% which is much higher than the incidence of twins in India which is around 0.9%-1% obtained for various studies. This may be because our institution being the only tertiary centre, had referrals from many of the PHC's and private hospitals for better neonatal care in anticipation of complications in neonates. This result with respect to the incidence of twins was consistent with the previous studies [3, 8, and 9]. The majority of women (66.33%) were in the age group of 21-30 years. Similar findings were obtained by Sahu et al [4], Bhalla et al [10] and Bangal et al [11] where majority of women were in age group 20-30 years which is the peak reproductive age group. The mean maternal age was 24.14 years which is comparable to other studies [8, 9, and 12]. Parity distribution of our study showed 62.37% women with twin pregnancy as multipara which is consistent with the findings of some other studies [8, 13]. The maximum (75.24%) women delivered between the gestational ages at 33-37 weeks. The mean gestational age was 35.37 weeks which is similar to the mean gestational age reported by Yeasmin et al [9], Pandey et al [12] and Vanaja et al [14].

In present study, 91.08% women had spontaneous conception. 2.97% of women had family history of twins. These findings are comparable to the finding of Pandey et al [12]. Twin pregnancy after taking ovulation inducing agents was observed in 8.91% of women compared to 8% in study by Masuda et al [15]. The incidence of preterm labour leading to preterm delivery was 53.46% which is nearer to that reported by other studies [8, 12 and 16]. Anaemia was the second most common maternal complication reported in 38.61% patients whereas the corresponding figures reported by Chowdhury and Brown et al were 35.8% and 35.5% for anaemia [17, 18]. We found gestational hypertension in 24.75% cases, antepartum haemorrhage in 1.98%, polyhydramnios in 4.95% cases, Hyperemesis gravidarum in 1.98% cases, premature rupture of membranes in 6.93% and post-partum haemorrhage in 0.99%.

Lower segment ceserean section was the most frequent mode of delivery (63.86%; 129/202). The rate of caesarean section was 31.18% for first twin and 32.67% for the second twin. The higher caesarean section rate in present study was due to malpresentation of first twin, preterm premature rupture of membranes, antepartum haemorrhage and previous caesarean section. In two cases, caesarean section was done to take out retained second twin. The delivery interval between first and second twin was <20 min in 85.14% patients, 20-40 min in 8.91% patients and >40 mins in 5.94%, this finding is comparable with the study done by Bhalla et al [10].

In existing study, more than three fourth (90.09%) of live born twins had low birth weight (<2500grams), this finding is consistent with that of Bangal et al study [20]. The mean birth weight of first twin was 2.39±0.52kg and that of second twin was 2.03±0.51kg. This is nearer to that reported by Pandey et al 2100 grams for the first twin and 2040 grams for the second twin [12]. The low birth weight in twin deliveries is due to prematurity and intrauterine growth restriction caused by the pregnancy complications associated with twin pregnancy such as hypertension and anemia. Birth weight discordance is fairly common among multiple pregnancies, and about one-quarter of the twin deliveries are affected by a birth weight discordance of 15%, while nearly 5% of twin gestations experience severe discordance (>or= 35%) [21]. In present study, 49.50% of twins exhibit <15% discordance (concordant), 35.64% were 15-25% (mildly) discordant, and about 14.85% were more than 25% (severely) discordant. There were 120 (59.40%) females and 82 (40.59%) males among live births. Female twins were found to be more frequent by Rezavand et al [13], Melamed et al [22] and Chittacharoen et al [23]. Authors observed total perinatal mortality of 10.89%, first twin 7.42% and second twin 3.46% is observed to be lower when compared to other studies [14, 24] due to availability of advanced neonatal care unit. Low birth weight was the most common cause for perinatal morbidity which is comparable with the study done by Smitha et al [6] and Bhalla et al [10]. Prematurity (9.90%) was the second leading cause for perinatal morbidity. The incidence of birth asphyxia was 1.98%. Neonatal sepsis noted in one fetus (0.99%).

CONCLUSION

Twin gestation is a high risk pregnancy associated with antenatal, intranatal and postnatal complications which cases increased morbidity and mortality of both mother and fetus. So, all multiple pregnancies need early diagnosis, adequate antenatal, intra-natal and post-partum care, treatment of antenatal complications, labor management in the tertiary center, liberal use of C-section will improve perinatal, maternal outcome.

Daily oral iron and folic acid supplementation with 30 mg to 60 mg of elemental iron and 400 µg (0.4 mg) folic acid is recommended for pregnant women to prevent maternal anaemia, puerperal sepsis, low birth weight, and preterm birth. Preterm labor was treated with tocolytic drugs (inj/tab terbutaline/duvadilan). Administration of a complete course of antenatal corticosteroids 1-7 days before birth in twin pregnancies is associated with a clinically significant decrease in neonatal mortality, short-term respiratory morbidity and severe neurologic injury.

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