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Research Article

## A retrospective study: twin gestation at tertiary care, maternal and fetal outcome

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### ABSTRACT

**Background:** The objective of our study was to study the maternal and neonatal outcome in twin gestation in a tertiary care center.

**Methods:** A retrospective analysis of 197 twin pregnancies admitted and managed at M S Ramaiah medical college. Parameters in the mother and fetus were studied for any adverse antenatal complications, mode of delivery.

**Results:** Prim gravid patients with twin pregnancy constituted (45.6%). 4.5% of patients had an IVF conception. 45.1% patients were unbooked to our institute, 82% of the unbooked patients presented with preterm labour and preterm premature rupture of membrane. PIH was noted in 32.9% of the patients, premature rupture of membranes (32.9%), Intra- Uterine Death of one fetus (6.09%) and intra uterine growth retardation (2.03%) was the antenatal complications observed. Out of the 197 patients 63 (31.97%) delivered by vaginal route whereas 134 (68.02%) had to undergo cesarean section. Section for the second twin was done in 4(2.03%). The 197 women of twin pregnancy gave birth to 378 live-born babies, 16(9.5%) stillborn and 32 (16.2%) died by the end of seven days due to complications related to prematurity: hyaline membrane disease, hyperbilirubinemia.

**Conclusions:** Early active intervention in twin gestation can reduce the maternal and fetal mortality and morbidity.

**Keywords:** Twin pregnancy, Presentation, Maternal outcome, Perinatal outcome, Preterm labour, Low birth weight

### INTRODUCTION

According to the World Health Organization (WHO) it is estimated that annually 287,000 maternal deaths and 3 million neonatal deaths occur globally, 99% of which occur in developing countries.<sup>1,2</sup> Multiple gestation is considered a high risk pregnancy. Currently, multiple gestations constitutes up to 3% of all pregnancies.<sup>3</sup>

In sub-Saharan Africa, the average twinning rate is 20 per 1000 deliveries, which constitutes the highest burden globally, as compared to an average twinning rate of 10 per 1000 deliveries in Europe and 5-6 per 1000 deliveries across Asia. Worldwide, the highest prevalence of multiple births is in Nigeria.<sup>4,5</sup> In India, up to 1% of the pregnancies are twin gestation and 10% of perinatal mortality can be attributed to twin pregnancies.<sup>7-10</sup>

Twin gestation can be attributed to multiple factors including genetic and environmental factors like advanced maternal age and increased parity.<sup>4-6</sup> There has been an increase in incidence of twins due to multiple reasons such as a rise in the number of women conceiving at an advanced age and in increase in use of assisted reproductive techniques.<sup>11</sup> Women with multiple gestation are more likely to have complications of pregnancy.<sup>12</sup>

Studies on multiple gestations are required due to the significant contribution of multiple gestations to maternal and perinatal morbidity and mortality. This is a retrospective study on twin pregnancies to assess the occurrence of twin gestation, maternal and fetal outcome.

## METHODS

This is a retrospective study, which was conducted at M S Ramaiah medical college, Bangalore, India. 197 women with twin pregnancies admitted to the labour room between January 2010 and December 2014 were included in the study. Variable patient parameters like age, parity, and duration of gestation, physical examination, mode of delivery, antepartum, intrapartum and postpartum complications were collected. Data obtained was analyzed using SPSS software 7 and results studied.

Inclusion criteria included all twin gestations admitted to the labor room between 27 to 38+6 weeks gestation and both twins alive at time of randomization.

Exclusion criteria were lethal fetal anomaly of either of the fetus.

## RESULTS

Over duration of 5 years study period, there were total of 5450 deliveries, which included 197-twin pregnancy.

The distribution of cases in relation to maternal socio-demographic profile is shown in Maximum numbers of women (72.5%) was in their peak fertile age i.e. in between 21 and 30 years age. The twins were seen almost in equally rates among the primi and multigravidas. No difference in the women had registered them for antenatal care and were attending antenatal clinic regularly to those who were not regular on the antenatal checkup. Only 80.07% of women delivered before 37 completed weeks of pregnancy (Table 1).

**Table 1: Maternal demographic data.**

Maternal profile	Number	Percentage
<b>Age distribution</b>		
<20 years	19	9.6%
20-29 years	143	72.5%
30-39 years	25	12.6%
>=40	10	5.09%
<b>Parity distribution</b>		
Primi	90	45.6%
Multi	107	54.3%
<b>Registration status</b>		
Booked	89	45.1%
Unbooked	108	54.8%
<b>Gestational age</b>		
<28 weeks	10	5.07%
28-32 weeks	60	30.4%
32-37 weeks	88	44.6%
>37 weeks	39	19.7%

Onset of labor was spontaneous in 42% cases of twins. 31.98% women delivered by vaginal route, of which 6% of patients required assistance of outlet forceps for the

first twin. The caesarean section rate was 68.02%. 42% of the caesarean sections were performed electively for fetal malpresentations. Emergency sections were performed for fetal distress, antepartum hemorrhage, cord complications, failure of progress of labor and for second of the twins. Anemia was noted in (17.7%). Pregnancy induced hypertension was seen in 32.9% of women (Table 2).

**Table 2: Maternal outcome.**

Maternal complication	Number	Percentage
Preterm labour	75	38.01%
PIH	65	32.9%
Malpresentation	25	12.6%
Anemia	35	17.7%
Hydramnios	8	4.06%
APH	12	6.09%
PROM	65	32.9%
GDM	14	7.10%
Caesarean	134	68.02%
PPH	14	7.10%

Fetal prematurity was seen in more than 72% babies where as 42% babies had very low birth weight. Prematurity and low birth weight predisposed majority of early neonatal deaths. These small babies suffered from respiratory distress (4 cases), pulmonary hemorrhage (5 cases), septicemia (8 cases) and disseminated intravascular coagulation (6 cases) (Table 3).

**Table 3: Fetal outcome.**

Fetal outcome	Number	Percentage
NICU admission	85	43.1%
RDS	42	21.3%
Septicemia	8	4.06%
APGAR <7 at 1 min	92	46.7%
APGAR >7 at 10 min	85	43.1%

## DISCUSSION

In the present study, the incidence of twinning is 3.61%, which is similar in various other studies. The possible reasons for the rise in number are referral to our hospital for better neonatal care in anticipation of complications in neonates. It was observed that these women with twin pregnancies were regular in antenatal visits irrespective of distance from home or parity. It was also observed that incidence of anemia, hyperemesis, gestational diabetes and pregnancy induced hypertension in twin pregnancy was significantly higher as compared to singleton pregnancies. Conservative management with tocolytic drugs and steroid were administered prophylactically for prevention of preterm labour in 38% twin pregnancies. The number of primis with twin gestation was 45.6% whereas the number of multigravidas with twin gestation was 54.4%.

In the present study the majority of twin pregnancies were seen in women in the age group 20 to 29 years (72.5%).

32 (16.2%) of women with twin gestation were admitted for safe confinement. In the study many women were found to have had premature onset of labor resulting in premature babies. This observation is seen to have occurred in spite of precautions like adequate rest, prophylactic tocolytic administration and circlage.

The present study was compared to a study which was done among all twin pregnancies admitted in Institute of Post Graduate Medicine and Research, Dhaka now Bangabandhu Sheikh Mujib Medical University (booked and unbooked cases were considered for the study).<sup>13</sup>

Among primis and multigravidas the incidence of twins was 45.6% & 54.4%. In the Chaudhary study it was reported that twins were more common in multis (64.2%) as compared to primis (35.8%).<sup>13</sup>

Chaudhary et al reports an incidence of 44% preterm delivery among twin pregnancies.<sup>13</sup> The present study shows an incidence of 38%.

Among the women with twin gestation under study it was found that 35 (17.7%) had anemia, 65 (32.9%) were diagnosed with hypertension and 8 (4.06%) had hydramnios as compared to 35.8%, 22.6% and 5.7% respectively as reported by Chaudhary et al. The incidence of APH and PROM were 65 (32.2%) and 12 (6.09%) whereas Chaudhary reports a much lower incidence 5.7% of APH and 3.8% of PROM.<sup>13</sup>

Among the total 197 women under study, 63 (31.9%) women delivered vaginally, while 134 (68.02%) had to undergo C-section. The most common indications for caesarean section among twin births were malpresentation followed by fetal distress. 4 (2.03%) patients underwent section for the second twin, indication being malpresentation for all.

## CONCLUSIONS

The study brings to light the complication associated with twin pregnancy, which is higher than that of a singleton pregnancy. Hence early detection and active management of twin gestation will reduce the maternal and fetal mortality and morbidity. The predominant early neonatal deaths can be prevented by averting preterm births by combined measures like bed rest, early cervical cerclage when incompetence is suspected, short term use of tocolysis, prevention of anaemia, administration of

glucocorticoids in preterm labor to enhance lung maturity.

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