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Original Research Article

Maternal and neonatal outcome of twin pregnancy at a tertiary care center

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ABSTRACT

Background: Twin pregnancies occurs in 2 to 4% of the total number of births. Also the perinatal mortality and morbidity associated with it is five to six times higher in comparison with singleton pregnancy. In developing countries, 287,000 annual maternal deaths and 3 million neonatal deaths contributes to 99% of such mortality as per records of the World Health Organization (WHO) estimates that 99% of the world's annual occur in developing countries.
Methods: This observational study included 50 women with twin pregnancy with gestational age of 26 weeks or more. Maternal and neonatal characteristics in twin deliveries at a tertiary care center were analyzed. High risk factors and it's association with maternal and perinatal outcomes was analyzed.
Results: Pregnancy induced hypertension (32%) was the commonest, Preterm rupture of membranes (PROM, 22%) was in the next order. Invitro fertilization (44%), malpresentation (26%) main indicators for lower segment cesarean section. Mean weight of first twin was 1.9±0.43 kg and for second twin it was 1.89±0.47kg (Table 1). Most of twins were diamniotic dichorionic (78%).
Conclusions: Twin pregnancies are hazardous to both for the mother and the neonate. It is certainly high risk factor which needs early identifications of complications and timely management. Perinatal outcome largely depends on gestational age, birth weight, presentation, mode of delivery.

Keywords: Twin pregnancy, Multiple pregnancy, Neonatal outcome

INTRODUCTION

Twin pregnancies occurs in 2 to 4% of the total number of births, however its prevalence is less than 8 twin pregnancies per 1,000 births in the East, Southeast and Southern Asia, including India.[1-4] Twin pregnancy is becoming a challenging due to its increase in incidence quite often attributed to assisted reproductive technologies (ARTs).5 Also the perinatal mortality and morbidity associated with it is five to six times higher in comparison with singleton pregnancy.[6-8]

Intrauterine fetal death, congenital malformations, prematurity, low birth weight (LBW-contributed by both prematurity and IUGR birth trauma), birth asphyxia are few of the reasons for high mortality. It also contributes to increased obstetric and perinatal complications such as, post-partum hemorrhage, preeclampsia and preterm birth.[4,8-11]

In developing countries, 287,000 annual maternal deaths and 3 million neonatal deaths contributes to 99% of such mortalities globally as per records of the World Health Organization (WHO).[12,13] In comparison to the past, current increase in incidence of twin pregnancy has been attributed to ART, increase in the use of ovulation inducing agents, a shift toward bearing children at older maternal ages.[14-16] Objective of this study is to evaluate the feto-maternal outcome of twin pregnancies at tertiary care centre.

METHODS

Study ethics and design

The study was initiated after obtaining approval from the Institutional Ethics Committee and approval from the Ministry of Health. The study was a retrospective, observational study carried out for data duration January 2018 to December 2020. We adhered to the latest update of Declaration of Helsinki guidelines.

Study participants

Medical records for adult (>18 years) pregnant women with twin pregnancies (confirmed by ultrasound examination) who were admitted in the hospital were reviewed. We examined maternal and neonatal characteristics in twin deliveries.

Data was not considered for patient with pre-existing medical complication like chronic hypertension, collagen vascular disease, diabetes mellitus, renal disease, or any other disorder that may adversely affect the present pregnancy, also congenital anomalies in either fetus excluded.

Study procedure

Study team analyzed Case record form, antenatal records, past health records, investigation reports. Investigator analyzed data archived in medical record dept regarding Maternal aspects such as age, weight, primigravida, multigravida, gestational periods, complications such as pregnancy induced hypertension, preterm rupture of membranes (PROM), anemia, gestational diabetes, hypothyroidism, Cervical Circlage, antepartum hemorrhage. Data regarding malpresentation, pre-eclamsia, previous LSCS, premature rupture of membrane, preterm delivery, and normal delivery were reviewed. Fetal aspects such as weight, IUGR, need of NICU. All relevant data were recorded and analyzed statistically by simple proportions.

RESULTS

During the study period of 36 months there were 2688 deliveries including 50 twin deliveries, giving the incidence of twin 1.86 %. The mean maternal age was 25.25±1.8 years for twin pregnancies. Mean gestational age of delivery was 34.57±1.94 weeks (Table 1).

Among major maternal complications pregnancy induced hypertension (32%) was the commonest, Preterm rupture of membranes (PROM, 22%) was in the next order, followed by anemia (20%), gestational diabetes (2%), hypothyroidism (18%), Cervical Circlage (12%), Antepartum hemorrhage (APH, 2%) (Table 2).

Among Indications for Lower segment cesarian section (LSCS), Invitro fertilization (44%) was the commonest, malpresentation (26%) was in the next order, followed by previous LSCS (10%), intrauterine growth retardation (8%), premature rupture of membrane (4%), pre-eclampsia (4%), (Figure 1).

Table 1: Demographic characteristics of the study population. α – represented in n (%), all others are represented in mean (SD).

Demographic characteristics	N (%)
Mean age (years)	25.25 (1.88)
Primigravida$^{\alpha}$	33 (66)
Multigravida$^{\alpha}$	17 (34)
Gestational period (weeks)	34.57 (1.94)
Weight first child (kg)	1.9 (0.43)
Weight second child (kg)	1.89 (0.47)

Table 2: Maternal and fetal complications; represented in n (%).

Maternal and fetal complications	N (%)
Pregnancy induced hypertension	16 (32)
Preterm rupture of membranes (PROM)	11 (22)
Anemia	10 (20)
Gestational diabetes	10 (20)
Hypothyroidism	9 (18)
Cervical circlage	6 (12)
Antepartum hemorrhage	1 (2)
NICU Admission	15 (30)
Neonatal Deaths	0 (0)

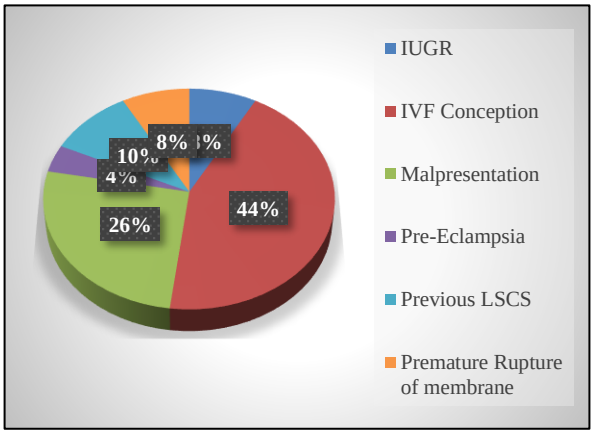

Figure 1: Indication of LSCS.

Caesarean section was performed on forty-six (92%) women, three (6%) had full term normal delivery and one (2%) delivered preterm (Figure 2).

Neonatal outcome

Mean weight of first twin was 1.9±0.43kg and for second twin it was 1.89±0.47 kg (Table1). Most of twins were diamniotic dichorionic (78%), followed by monoamniotic

monochorionic pregnancy (18%) and conjoined twin (4%) (Figure 3).

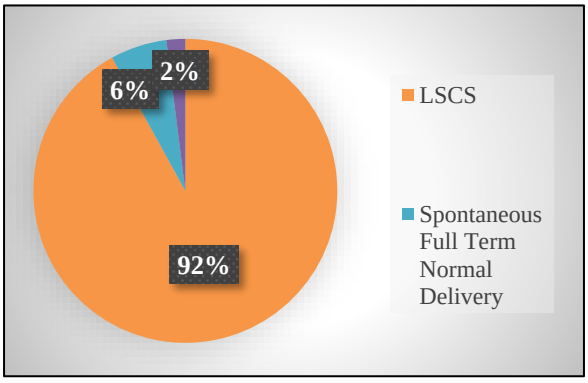

Figure 2: Delivery type in (in percentage).

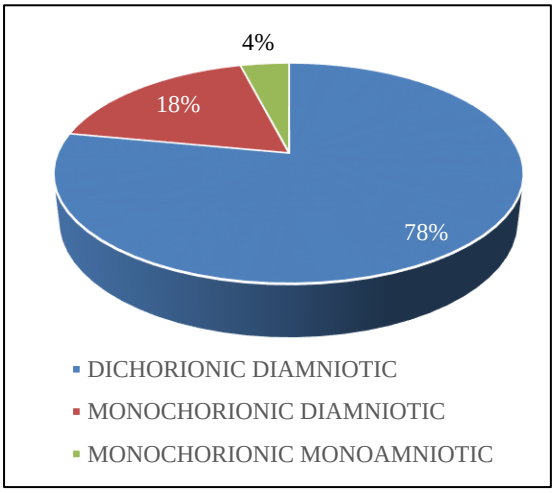

Figure 3: Distribution of patients by type of chrionicity (in percentage).

DISCUSSION

Health risks for both mothers and babies are far more in twin or multiple births, and also accompanying greater health care cost makes it important topic to deliberate.[17] This higher incidence of twins in our study is attributed to invitro fertilization (44%) (Figure 1) which is similar in earlier studies.[18] ART-associated twins have lower perinatal mortality than spontaneously conceived twins is observed however few studies mentions comparable perinatal outcome as with naturally conceived twins in our study deliveries prior to 28 weeks were excluded.[19-21] Advancing age is considered as one of the important factor in twin pregnancy which is not the case in our study, also also that various authors have different opinions on it.[22-24]

Our study reports 66% primigravida and 34% multigravida which is contrary to already published study in which 84.2% were multigravida another study reported 45.7% primigravida and 54.3% multigravida.[25,26] Studies reported preterm delivery in 60% and 67% of twin pregnancies and few other studies reported even lower 38%29 and 44%30, which is in line with our study. Studies have reported cesarean section (LSCS) in 68%, 49% and 45% where as our study reports it as 92%.[27-31]

In our study most common mode of delivery is LSCS , few studies reported that mode of delivery is a significant predictor of perinatal outcome , however this predictor is not quite conclusive, as conflicting results are published in other few studies.[31,32] Pregnancy induced hypertension(PIH) was observed in 32% twin pregnancy in our study which was similar to study published earlier which reported 40 % PIH.[33] Preterm rupture of membranes (PROM) was observed in 22% cases in our study and it was reported higher in few other studies 31.81% and 38%.[30,33] Our study reports gestational diabetes 20% while one of the study has reported it very low which is 1.8%. Presentation in labor is important factor in intrapartum management.[34] NICU admissions was reported as 65.15% neonates which was similar to another study 66% however in our study it was 30%.[33-35]

Limitations of the study

Limitations of this study were less sample size and retrospective design of the study.

CONCLUSION

Twin pregnancies are hazardous to both for the mother and the neonate. It is certainly high risk factor which needs early identifications of complications and timely management. Perinatal outcome largely depends on gestational age, birth weight, presentation, mode of delivery.

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