



Contents lists available at BioMedSciDirect Publications

International Journal of Biological & Medical Research

Journal homepage: www.biomedscidirect.com



Original Article

Perinatal outcome of twin pregnancies at a tertiary care centre, south india

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ARTICLE INFO

Keywords:

Chorionicity

Perinatal outcome

Preterm

Twin gestation

ABSTRACT

BACKGROUND: Twin gestation is a high risk pregnancy with unique complications which have important implications on the perinatal adverse effects. Compared to singletons, multiple births are associated with a substantially-higher risk of maternal and perinatal mortality worldwide. It is also high risk delivery, especially so for the second of the twin. However, little evidence exists on the perinatal profile of twin pregnancy. **OBJECTIVES:** To study the perinatal outcome in twin pregnancies at a tertiary care centre. **METHODS:** It is a prospective study of 92 consecutive twin gestations achieving a gestational age of 28 weeks and above at a tertiary care hospital, South India, for a period of two years. Perinatal outcomes including perinatal morbidity and mortality in relation to gestational age, mode of delivery and birth weight of the baby were analyzed. Various reasons for babies requiring NICU admission were noted. **RESULTS:** There were 4525 deliveries in the same institution during the study period. Incidence of twin gestation observed was 20.3 per 1000 births. Preterm labour was observed in 74% of patients. Perinatal mortality observed in this study was 15.2%. 57 (61.95%) spontaneous deliveries showed 19 (67.85%) of perinatal mortality compared to 23 (25%) LSCS which showed 5 (17.85%) of perinatal mortality. In our study various reasons found for NICU admission were respiratory distress syndrome 2 (2.17%), very low birth weight 35 (19.02%), and birth asphyxia in 2 (2.17%) of cases and majority of them were second twin. Perinatal mortality observed in twins with gestational age 34-36 weeks was 9 (32.14%). 17 (60.71%) of perinatal mortality was observed in VLBW babies. Data collected was analyzed with descriptive statistics like percentage and proportion. **CONCLUSION:** Prolongation of gestation by optimum care of mothers with twin gestation in the antenatal period has a beneficial effect on improving the perinatal outcome. Perinatal mortality can also be reduced by appropriate management protocols directed towards prolonging the gestational age, increasing the birth weight and optimizing the mode of delivery.

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1. Introduction

Multiple births are much more common today than they were in the past. This dramatic rise in the incidence of multiple gestation, especially in higher order multiple gestation, has been attributed to the increase in the use of ovulation inducing agents, use of assisted reproductive technologies, and a shift toward bearing children at

older maternal ages, when multiple gestation are more likely to occur naturally [1,2]. Twin pregnancies are associated with increased perinatal mortality, mainly related to prematurity, but complications during birth may contribute to perinatal loss or morbidity [3]. Epidemiological evidence suggests that the lowest rate of perinatal mortality occurs at an earlier gestational age and at a lower birth weight in twins than in singleton pregnancy [4].

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2. Material and Methods

This is a prospective study. The main source of data for the study are patients with twin gestation of more than 28 weeks, irrespective of age, parity and medical disorders hospitalized at this tertiary centre. Detailed obstetric history, family history of twins, intake of ovulation induction agents were taken. A general physical examination was done to note the associated complications like anemia, hypertension, and jaundice. Per abdominal examination was done to note the presenting part, lie, position, size and its relation to birth canal and FHS were noted. Pelvic examination was done to note PROM and antepartum hemorrhage and to note the stage of labour, presentation, status of the membranes and the adequacy of pelvis. Data regarding maternal and neonatal parameters including demographic details, history, antepartum and intrapartum complications, neonatal outcomes and perinatal mortality were taken. Placental examination done to confirm the chorionicity. Details of mode of delivery, gestational age at the time of delivery, baby's sex, birth weight and apgar score were noted. Study was conducted during antenatal, labour and post-natal period till the patients were discharged.

3. Results

There were 4525 deliveries in this teaching hospital during the study period of two years. There were 92 twin deliveries encountered with an incidence of 20.3 per 1000 births (2.03%). In the present study 53(57.6%) of cases were booked where as 39(42.3%) cases were unbooked who came in labour or with some intrapartum complications. Leading antenatal complications were anaemia, hypertension, preterm labour and jaundice.

Maximum incidence 39(42%) of twinning were in the age group 21-25years. Family history of twins was present in 6.4% of cases. Malpresentations were present in 51.7% of cases. Cord presentations were observed in 2% cases. 68 (73.8%) cases of twins delivered before 37 weeks. Majority of the cases (92%) showed spontaneous onset of labour. Cesarean section was done for both twins in 23(25%) cases and for second twins LSCS done in four cases in view of placental prolapse and fetal distress.

Table 1 shows perinatal mortality in relation to mode of delivery. In our study in those delivered spontaneously perinatal mortality was observed in 19(67.85%) of cases when compared to those who underwent LSCS had perinatal mortality rate in 5(17.85%) of cases.

Table1: showing the relation between mode of delivery and perinatal mortality.

Mode of delivery	FirstTwin No ofcases (PMR)	SecondTwin No ofCases (PMR)	Perinatal mortality(%)
Spontaneous	57(10)	44(9)	19 (67.85)
Assisted	12(1)	22(3)	4 (14.28)
LSCS	23(2)	27(3)	5 (17.85)
Total	92(13)	92(15)	28(100)

- a) Spontaneous (Vertex vaginal delivery + Spontaneous breech delivery)
- b) Assisted delivery (Assisted breech delivery+ Internal podalic version+ Instrumental delivery)
- c) LSCS (Lower segment cesarean section)

Table 2 shows perinatal mortality rate in relation to gestational age. In present study patients delivered at gestational age of 34-36weeks showed perinatal mortality rate in 9(32.14%) of cases as compared to 4(14.28%) in those who delivered 37 weeks and above.

Table 2. Influence of gestational age on perinatal mortality of twins

Gestational age (weeks)	No of cases	First twin No of deaths	Second twin No of deaths	Perinatal mortality
28-30	7	4	4	8 (28.57)
31-33	16	3	4	7(25.00)
34-36	45	4	5	9(32.14)
37 and above	24	2	2	4 (14.28)
Total	92	13	15	28

Table 3 shows perinatal mortality rate in relation to birth weight of the baby. In our study babies with very low birth weight showed maximum perinatal mortality rate in 17(60.71%) of cases as compared to 2(7.14%) of cases with birth weight of 2500 grams and above.

Table 3: Perinatal Mortality in Relation to Birth Weight

Birth Weight (grams)	FirstTwin No ofCases(died)	Second Twin No ofCases(died)	Perinatal mortality
<1500	15(7)	20(10)	17 (60.71)
1501-2500	68(5)	61(4)	9 (32.14)
>2501	9(1)	11(1)	2 (7.14)
Total	92(13)	92(15)	28

Table 4 shows neonatal outcome in both first and second twin. In the present study, 17 cases (18.4%) among first twin and 19 cases (20.6%) among second twins required NICU admission. Various reasons for NICU admissions were low birth weight, preterm care, birth asphyxia, birth trauma like brachial palsy.

Table 4: Neonatal outcome of first & second twin.

Neonatal Outcome	First Twin (n=92) (%)	Second Twin (n=92) (%)	Total (n=184) (%)
LBW	68(73.91)	61(66.30)	129(70.10)
VLBW	15(16.30)	20(21.73)	35(19.02)
AdmitNICU	17(18.47)	19(20.65)	36(19.56)
RDS	0	2(2.17)	2(1.08)
BirthAsphyxia	0	2(2.17)	2(1.08)
Sepsis	0	1(1.08)	1(0.54)
Perinatal Death	13(14.13)	15(16.30)	28(15.21)

Data collected was analyzed with descriptive statistics like percentage and proportion. 28(15.2%) perinatal deaths occurred giving a perinatal mortality rate of 152/ 1000 live births. Macerated babies were 10, still birth were 10, Neonatal death were seen 6 cases. The causes for neonatal death were respiratory distress syndrome in 2 (33%) cases, birth asphyxia in 2 (33%) of cases, septicemia and twin to twin transfusion in 1 (16%) cases each.

4. Discussion

Twin gestation is a high risk pregnancy with unique antepertum and intrapartum as well as fetal complications. Our study found that the incidence of 20.3 per 1000 live births. Incidence is more as it is a tertiary referral centre.

Over the past years rate and no of twin births have increased, in general due to innovations in infertility treatment. Risks fall to fetuses in terms of morbidity and mortality primarily relating to the twins being born with preterm and with low birth weight compared to singletons [5]. Better intranatal obstetric care with liberal use of LSCS along with good neonatal intensive care unit especially for premature low birth weight babies will help to decrease perinatal mortality rate in twin pregnancies significantly[6].

The perinatal mortality in twin pregnancies in the present study was 152 per 1000 births (15.2%) compared to 58.3 per 1000 births in singleton pregnancy. Increased perinatal mortality was observed in second twin. In the present study, both babies delivered by vaginal route had more perinatal mortality when compared with babies delivered by other modes like LSCS or instrumental deliveries.

Incidence of preterm labour is high in the present study as most of the cases were associated with PROM and most of them were admitted in active phase of labour. It is observed in the present study that perinatal mortality was more in patients who delivered at gestational age between 34-36 weeks. Incidence of LSCS in the present study can be compared well with that of a study by university of Toronto[7]. Incidence of low birth weight was high in the present study than mentioned by others[8,9].

5. Conclusion

Preterm labour is the leading cause of increased perinatal mortality in twin pregnancy. So all efforts should be made by intensive approach and protocols directed towards prolongation of gestational age, increasing the birth weight and optimizing the mode of delivery. Better intranatal obstetric care with liberal use of LSCS along with good neonatal intensive care unit especially for premature low birth weight babies will help to decrease perinatal mortality rate in twin pregnancies significantly.

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