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An observational study on maternal and foetal outcome in twin Pregnancy

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Abstract:
Objectives: *Objectives of our study was to evaluate the maternal and foetal outcome in mothers of twin pregnancy.*
Methodology: *A detail history, complete assessment such as gestational age, parity, nature of conception, use of ovulation induced drugs, maternal or obstetrics complications, foetal weight, foetal discordancy, foetal viability, malformations, abnormal vascular communications, presentations of foetuses were performed to all cases. Relevant investigations were performed. A continuous follow up of all cases were performed from throughout pregnancy to up to delivery and discharge.*
Observations: *Data was analyzed by using simple statistical methods with the help of MS-Office software.*
Conclusions: *Fertility age was commonly seen in mothers with age 20-30 years. Pre term labour was mostly seen in cases of twin pregnancy. Majorities of babies were foetal birth weight 1500-2000 grams. Second babies were more prone to malpresentation than first baby. Anaemia was the most common malpresentation. 20.5% Neonatal morbidity and 5.5% neonatal mortality rate were seen in cases of twin pregnancy.*
Keywords: *maternal outcome, foetal outcome, twin pregnancy.*

Introduction

Twin pregnancy is considered as a high risk pregnancy. In USA it has been reported constant as 32/1000 births (Chauhan et al.,)[1] the lowest incidence 4/1000, whereas African countries have higher incidence of twins, up to 54/1000 births reported from Nigeria (Fisk, 2007).[2] 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 (Cruikshank, 2007).[3] Pregnancy is associated with a high risk of maternal and neonatal complications such as preterm labour, pregnancy

induced hypertension, antepartum and postpartum haemorrhage, fetal malformations, and perinatal death. Prematurity which is the commonest antenatal complication accounts for the majority of perinatal death.[4]

Multiple pregnancies in developing countries expose mother and infants to extremely high risks. As multiple births can contribute significantly to maternal and perinatal morbidity and mortality, it is important to investigate the magnitude of the increase in feto-maternal risk. The outcome of twin pregnancies across developing countries has not been extensively investigated. Twin birth registries are rare in low- and middle-income countries (LMICs)[5] and twin-specific research is generally on hospital-based cohort studies, secondary analyses of interventional trials or retrospective analyses of Demographic and Health Survey (DHS) data, all with significant limitations and bias[6,7]. Objectives of our study were to evaluate the maternal and foetal outcome such as maternal age, gestational age, parity, malpresen-taion, foetal birth weight and neonatal morbidity and mortality of cases in twin pregnancy.

Materials and Methods

This present study was conducted in department of Obstetrics and Gynaecology, Anugrah Narayan Magadh Medical College, Gaya, Bihar India during a period from January 2017 to December 2017.

A total 100 cases of pregnant women with twin gestation were enrolled in this study.

Attendants/entire subjects signed an informed consent approved by Institutional ethical committee of Anugrah Narayan Magadh Medical College, Gaya, Bihar was sought.

Methods

A complete assessment such as gestational age, parity, nature of conception, use of ovulation induced drugs, maternal or obstetrics complications, foetal weight, foetal discordancy, foetal viability, malformations, abnormal vascular communications, presentations of foetuses and relevant investigations were performed to all cases. A continuous follow up of all cases were performed from throughout pregnancy to up to delivery. Mother and babies were followed up till discharge.

All premature babies were given nasogastric foods or through parenteral fluids and were kept under supervision in ICU, till capable of taking breast feeds.

Statistical Analysis

Data was analyzed by using simple statistical methods with the help of MS-Office software.

Observations

A total of 100 cases of twin pregnancy with age group 20 years to greater than 30 years were enrolled in this study. Majority of cases 84(84%) were in age group of 20-30 years.

Table 1 Age of pregnant women

Age	No. of cases	percentage
< 20 years	13	13%
20-30 Years	84	84%
>30 years	3	3%
Total	100	100%

Table 2 Parity of cases with twin pregnancy

Parity	No. of cases	Percentage
Primi	55	55%
Multi	45	45%

Parity of cases was 55(55%) primi gravida and 45 (45%) multi gravida.

Table 3. Gestational age

Gestational age	No. of cases	Percentage
< 34 weeks	32	32
34-37 weeks	55	55
>37 weeks	13	13

In this present study, majority of cases 55(55%) were gestational age 34-37 weeks. 32(32%) cases were gestational age <34 weeks, and 13(13%) cases were > 37 weeks.

Table 4 Antenatal complications

Antenatal complication	No. of patients	Percentage
Preterm labour	87	87%
PIH	13	13%

In this study, preterm labour were seen in 87(87%) cases and (PIH) pregnancy induced hypertension was seen in 13(13%) cases.

Table 5 Relation between perinatal outcome and mode of delivery.

Mode of delivery	No. of patients	Percentage
Spontaneous	67	67%
Caesarean	27	27%
Instrumental vaginal	6	6%

Majority of cases 67(67%) were spontaneous mode of delivery. 27(27%) were delivered by caesarean. Instrumental vaginal delivery was 6(6%).

Table 6 Foetal birth weight

Foetal birth weight	No. of patients	Percentage
< 1500 grams	64	32%
1500-2000 grams	78	39%
>2000 grams	58	29%

78(39%) foetus were birth weight 1500-2000 grams. 64(32%) foetus were birth weight < 1500 grams. And 59(29%) were foetus birth weight > 2000 grams.

Table 7 Malpresentation

Malpresentation	No. of patients	Percentage
First baby	5	5%
Second baby	27	27%
Anaemia	34	34%
Hydraminos	12	12%
APH	9	9%
PROM	13	13%

In this present study, anaemia 34(34%) was the most common malpresentation. And other malpresentations were PROM 13(13%), hydraminos 12(12%) and APH 9(9%). Second baby was the major risk for malpresentation.

Table 8 Sex of baby

Sex of baby	No. of cases	Percentage
Males	126	63%
Females	74	37%

Majorities of babies were males 126(63%). Female babies were 74(37%).

Table 9 Perinatal outcome

Perinatal outcome	No. of cases	Percentage
Live birth	185	92.5%
Still birth	15	7.5%

Out of total 200 babies, number of live birth was 185(92.5%) and 15(7.5%) still birth was 15(7.5%).

Table 10 Neonatal outcome

Neonatal outcome	No. Of cases	Percentage
ICU admission	108	54%
Neonatal morbidity	41	20.5%
Neonatal mortality	11	5.5%

Out of 200 babies, 108(54%) babies were admitted in intensive care unit. Neonatal morbidity was seen in 41(20.5%). And neonatal mortality was seen in11 (5.5%).

Table 11 Causes of neonatal death.

Cause of neonatal death	No. of cases	Percentage
RDS	13	6.5%
Septicaemia	17	8.5%
Pulmonary haemorrhage	7	3.5%
DIC	3	1.5%

Major causes of neonatal death was septicaemia 17 (8.5%), RDS 13(6.5%), pulmonary haemorrhage 7(3.5%) and DIC 3(1.5%).

Discussion

Traditionally multiple pregnancies are regarded to be unfavourable, probably due to the poor perinatal outcome, increased maternal mortality and morbidity, long term developmental issues and the expensive treatment involved.

Twin pregnancy is considered as one of high risk for both mother and baby.

Here, in our present study we were studied on maternal and foetal outcome of 100 cases of twin pregnancy. Majority of cases 84(84%) were in age group of 20-30 years. Least number of cases 3(3%) were in age greater than 30 years.

Similar study was conducted by Abdelmoneim, E, et al. (2016).[4] In their study most of mothers were falling between the age group 23-32 years of age. Similar results was also found by Spellacy et al., 1990;Yuel and Kaur, 2007.[8,9]

Since the early 1970s, several overview studies have been published in which figures from a large number of smaller studies were brought together. The overall conclusion drawn from these figures was that natural twinning rates were low in East

Asia and Oceania (less than 8 twin births per 1000 births), intermediate in Europe, USA and India (9–16 per 1000 births) and high in some African countries (17 and more per 1000 births).[10,11]

In this present study, cases of primi gravida were 55(55%) and multi gravida 45(45%).

Amiben V. Gajera, et al. (2015) also supported the findings of our study, they were stated that with regards to parity higher incidence was seen in primi gravida and least was in multi gravida.[12]

In this present study, majority of cases 55(55%) were gestational age 34-37 weeks. 32(32%) cases were gestational age < 34 weeks, and 13(13%) cases were > 37 weeks. We were seen that most common gestational age was 34-37 weeks.

Hada A, et al. (2016) were found that most common gestation age at delivery was 29-36 weeks in 47.1% cases.[13] In study of Sheela et al (2014) most common gestational age at the time of delivery was 32-36 weeks in 67% cases.[14]

In this study, preterm labour were seen in 87(87%) cases and pregnancy induce hypertension (PIH) were seen in 13(13%) cases.

The incidence of hypertensive disorders of pregnancy was significantly higher in twin pregnancies[15,16]. This has been attributed to exposure to superabundant chorionic villi in twin pregnancies[17].

In this present study, most of the cases 67(67%) were undergone spontaneous mode of delivery. 27(27%) were delivered by caesarean section and 6(6%) through Instrumental vaginal delivery.

Prematurity is the leading cause of neonatal death among twin gestations. The higher rate of preterm delivery compromises the survival chances of the neonates and increases their risk of lifelong disability.

Mahita Reddy A, et al. (2016) were studied on twin pregnancy and found that Vaginal delivery occurred in 165 cases, in that spontaneous being 149, forceps being 3 and induced 14. Caesarean delivery occurred in 135 cases with elective LSCS being 42 and emergency LSCS being 92.[18]

In this present study, most common malpresntation was anaemia 34(34%). Others were premature rupture of membrain (PROM) 13(13%), hydrominos 12(12%) and anteparttum haemorrhage 9(9%). Malpresentation was greatly seen in second baby 27(27%).

Anaemia. It may be due to increased fetal drain on maternal iron and folate stores and increased hemodilution that accompanies twin gestation. Women with twin pregnancies should be supplemented with prophylactic iron (200 mg/day) and folic acid (1 mg/day).

PROM: Excessive growth of uterus in twin gestation results in early opening of the cervix & exposure of the fetal membranes to the bacterial flora of the vagina leading to amnionitis with intact membranes and in severe cases to amnionitis with ruptured membranes. Hence infections of the urinary tract, the cervix and the vagina in these mothers, must be treated aggressively.

Acute hydramnios is more common in monozygotic twin pregnancies. Chronic hydramnios incidence is same in both dizygotic and monozygotic twin pregnancies. In our study there was no maternal mortality.

In this present study, majorities of foetus 78(39%) birth weight was 1500-2000 grams. 64(32%) foetus were birth weight < 1500 grams. And 59(29%) were foetus birth weight > 2000 grams. Number of male babies was 126(63%) and female babies were 74(37%).

Amiben V. Gajera, et al (2015)[12] were found that the incidence of having a baby with low birth weight (of less than 2500 gms) was 86.9%; however, Bangal et al showed an incidence of 82%.

In this present study, out of total 200 babies, number of live birth was 185(92.5%) and still birth was 15(7.5%). 108(54%) babies were admitted in intensive care unit. Neonatal morbidity was 41 (20.5%). And neonatal mortality was 11(5.5%). Major causes of neonatal death was septicaemia 17(8.5%), RDS 13(6.5%), pulmonary haemorrhage 7(3.5%) and DIC 3(1.5%).

Similar study was conducted by Vidyadhar B. Bangal, et al (2012). They were studied on 100

cases of twin pregnancy and found that there were 15 stillbirths and 20 early neonatal deaths. Overall perinatal deaths were 17.5%.Prematurity and low birth weight predisposed majority of early neonatal deaths. These small babies suffered from respiratory distress 9 cases(4.5%), pulmonary hemorrhage (4cases), septicemia 12cases (6%) and disseminated intravascular coagulation 9cases (4.5%).[19]

Dr. Deepthi H. R, et al (2015)[20] stated that perinatal morbidity requiring NICU admission was 36.6% mainly due to preterm deliveries and low birth weight. Similarly seen in Chowdhury et al [21] and by Papierniek et al.[22]

Conclusion

This present study was concluded that the major fertility age was 20-30 years of mothers of twin pregnancy. Spontaneous mode of delivery was commonly seen. Majorities of cases were pre term labour. Majorities of babies were foetal birth weight 1500-2000 grams. Second babies were prone to malpresentation than first baby. Anaemia was the most common malpresentation. Major causes of neonatal mortality were septicaemia and respiratory distress syndrome. Neonatal morbidity rate was 20.5% and neonatal mortality rate was 5.5 % in cases of twin pregnancy. Hence we concluded that pre term labour, anaemia, septicemia and respiratory distress syndrome were common causes of neonatal morbidity and mortality of cases of twin pregnancy.

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