FETAL COMPLICATIONS IN PREGNANT WOMEN WITH MULTIPLE PREGNANCY

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ABSTRACT

OBJECTIVE: To determine the fetal complications associated with multiple pregnancy in second and third trimester of pregnancy.

METHODOLOGY: This descriptive study was carried out in the obstetrics and Gynaecology department at Postgraduate Medical Institute Lady Reading Hospital Peshawar. Duration of the study was 1 year from January 2012 to December 2012. All patients with twin gestations, triplets and high order multiplets visiting obstetrics and Gynaecology unit of the institute and who were admitted in ward and their fetal with complications were included in the study and after taking informed consent their characteristics were recorded by filling proforma.

Results: Sixty patients with multiple gestations were included in the study. In 28 patients (46.7%) cephalic/ cephalic was the most common presentation. Among the 126 total fetuses in this study, 64 fetuses (50.8%) had low birth weight. 51 fetuses (40.4%) were premature, overall fetal loss was 16 (12.6%), 37 fetuses (29.3%) were admitted in nursery. 77 fetuses (61.1%) had apgar score of more than 7 at 5 minutes, while rest of the babies had Apgar score of less than that. Among fetal complications prematurity was recorded in 51 (40.4%) cases, admission in nursery in 37 (29.3%), IUGR in 20 (16.7%), still birth in 16 (12.6%), fetal distress in 2 (1.6%), congenital anomalies in 2 (1.6%) and demise of one fetal in 01 (0.7%) cases.

CONCLUSION: Multiple gestations are considered as pregnancies at high risk, which may be convoluted by prematurity, admission in nursery, low birth weight infants, intrauterine growth retardation, neonatal morbidity and mortality as showed in the results of our study.

Keywords: Twin pregnancy, Triplets, High-order multiplets, fetal complications.

INTRODUCTION

Multiple gestations are considered as pregnancies at high-risk and they often become more complex by preterm birth, neonatal morbidity, low birth weight and mortality of infant, perinatal and neonatal.[1]

Premature delivery put an infant at high risk for severe complexities or even early death. Infants may face immature brain, circulatory system, lungs, eyes and intestinal system. The premature babies might be handicaps for long life. 50% of the premature babies who die are because of respiratory distress syndrome and are unable to circulate the blood throughout of the body by means of lungs.[2]

About 10% of the death of the premature babies are caused by brain damage. In twins and multiple pregnancies, about 30% of the baby's deaths occur due to birth defects and stillbirths. In 50% of twins, low birth weight of less than 2,500 grams occurs.[2]

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For chromosomal and structural abnormalities of fetus, twin and triplet pregnancies are at higher risk as compared singleton pregnancies. That's why invasive testing like amniocentesis have high probability to offered in twin and triplet pregnancies.[3]

Many of the earlier published research studies concentrate on discordant growth within twin pairs. These studies revealed that they have strong relationship with malformations of structure, mortality of perinatal, restriction of fetal growth, preterm delivery, caesarean delivery for non-reassuring fetal status, umbilical arterial acidaemia, NICU admission and respiratory morbidity.[4,5] The potential ESPRiT Study done in Ireland recognized that the threshold for significant birth weight discordance is related with an increase in perinatal rate of disease and it is 18% both for dichorionic twins and for monochorionic twins devoid of syndrome of twin-twin transfusion.[4]

In one study,[6] 65 cases both the twins were males and in 45 cases both the twins were female babies. Of the 9 triplets, 7 cases were got as intrauterine death while the other 2 were gone astray to follow-up. In this study the perinatal mortality rate of 172 per 1000 births was observed. There were 42 perinatal deaths amongst 244 twin babies, which comprised of 30 stillborn and 12 neonatal deaths. Cases were equal for first and second twin in 30

stillborn fetuses, while 2 other second twin had early neonatal death than the first twin. As the gestation advances neonatal mortality rate decreases. This suggests that the main cause for high perinatal mortality is prematurity. In an earlier study, for 6 neonatal deaths and congenital malformation, sepsis was observed. It was also observed for severe neural tube defects for 10 cases.[6]

This study evaluated prevalence of fetal complications in patients with multiple pregnancies presenting to a tertiary care hospital of Peshawar. The early identification and proper management of these high risk patients would minimize the further fetal complications. This study also helps to reduce the complications of fetal in patients with multiple pregnancy in future cases.

METHODOLOGY

This descriptive study was carried out in the department of obstetrics and Gynaecology unit at Postgraduate Medical Institute Lady Reading Hospital Peshawar. Duration of the study was 1 year from January 2012 to December 2012. All patients with twin gestations, triplets and high order multiplets visiting obstetrics and Gynaecology unit of the institute and who were admitted in ward and their fetal with complications were included in the study and after taking informed consent their characteristics were recorded by filling proforma.

The data of fetals of women with multiple pregnancy having complications was collected on a specially designed proforma. The fetal demographics including age, sex, apgar score and birth weight were noted. The data regarding fetal complications was also collected. Main outcome measures were fetal complications (like prematurity, admission in nursery, low birth weight infants, intrauterine growth retardation, neonatal morbidity and mortality. In the statistical package SPSS version 12 data was written and then data was analyzed statistically. For numeric variables, Mean ± SD was calculated, while for categorical variables, frequency distribution and their percentages were calculated.

RESULTS

A total of 60 fetals of mothers with multiple gestations were included in the study. In 28 patients (46.7%) cephalic/ cephalic was the most common presentation as shown in table 1. Among the 126 total fetuses in this study, 64 fetuses (50.8%) had low birth weight. 51 fetuses (40.4%) were premature, overall fetal loss was 16 (12.6%), 37 fetuse (29.3%) were admitted in nursery. 77 fetuses (61.1%) had apgar score of more than 7 at 5 minutes, while rest of the babies had Apgar score of less than that.as shown in table 2. Among fetal complications prematurity was recorded in 51 (40.4%) cases, admission in nursery in 37 (29.3%), IUGR in 20 (16.7%), still birth in 16 (12.6%), fetal distress in 2 (1.6%), congenital anomalies in 2 (1.6%) and demise of one fetal in 01 (0.7%) cases.as shown in table 3.

Table NO. 1: VARIOUS DISTRIBUTION OF FETAL

Variables	No. of patients	Percentage
Fetal presentation:		
Cephalic/Cephalic	28	46.7 %
Cephalic/Breech	17	28.3 %
Breech/Cephalic	7	11.7 %
Breech/Breech	2	3.3 %
Cephalic/Transverse	2	3.3 %
Breech/Transverse	1	1.7 %
Transverse/Breech	1	1.7 %
Transverse/Cephalic	2	3.3 %
Sex-wise distribution:		
Both Male	19	31.7 %
Male and Female	16	26.6 %
Both Female	25	41.7 %
Birth Weight Discordance (BWD):		
< 25 % BWD	50	83.3 %
≥ 25 % BWD	10	16.7 %

Table NO. 2: FETAL BIRTH WEIGHTS AND APGAR SCORE

Fetal birth weights	No. of twins	Twin – I	Twin – II	Twin – III	Percentage
<2.0kg	35	14(11.1%)	19(15.07%)	3(2.3%)	27.8%
2 – 2.4kg	29	12(9.5%)	14(11.1%)	2(1.6%)	23.0%
2.5 – 2.9kg	39	19(15.07%)	19(15.07%)	1(0.7%)	30.95%
3 – 3.4kg	19	12(9.5%)	7(5.5%)	-	15.07%
≥ 3.5kg	4	3(2.3%)	1(0.7%)	-	3.17%
Apgar Score:					
< 7 at 1 mint		22(17.4%)	25(19.8%)	4(3.1%)	40.41%
≥ 7 at 1 mint		38(30.1%)	35(27.8%)	2(1.6%)	59.5%
< 7 at 5 mint		22(17.4%)	23(18.2%)	4(3.1%)	38.88%
≥ 7 at 5 mint		38(30.1%)	37(29.3%)	2(1.6%)	61.1%

Table NO. 3: FATAL COMPLICATIONS

Fetal complications	No. of Fetuses	Percentage
Prematurity	51	40.4%
Admission in nursery	37	29.3%
IUGR	20	16.7%
Still Birth	16	12.6%
Fetal Distress	2	1.6%
Congenital anomalies	2	1.6%
Demise of single fetus	1	0.7%

DISCUSSION

A higher increase has been observed in the multiple birth rates over the past years. Many factors are involved in this dramatic increase such as more use of ovulation inducing drugs and the recently advanced assisted reproductive technology like in vitro fertilization. Multiple gestation pregnancies show distinctive tasks to the modern obstetrician due to high obstetric risk

For newborns over 2 lb, 3 oz. (1,000 grams), the overall survival rate in our study was 85% and for newborns having less than 2 lb, 3 oz, the survival rate was 40%. Throughout the childhood years birth weight also relates diligently to the severity of disability. In babies having birth weight less than 2 lb, 3 oz, Disability happens in over 25% of children.[7]

The results of a study showed that mean birth weight for triplets is about 4 pounds and for quadruplets, it is about 3 pounds. In twins, the risk for cerebral palsy is four times more probable to happen due to prematurity. For triplets and higher order multiple births this rate is higher. Visual impairment or blindness might also be caused by prematurity. [7]

An earlier local study witnessed that perinatal mortality rate was higher at the birth weight of 1.5kg. Which shows that there is no direct relationship between perinatal mortality rate and birth weight. It is apparent from our study that the neonatal birth weights show significant part for survival in early neonatal period as in higher birth weight neonates have mature respiratory, cardiovascular, sensory and neuronal systems.

Preterm labour and complications of prematurity has been studied as the most significant factor related with increased perinatal mortality during some studies. In most (40.4%) of the cases in our study prematurity was observed. Our study results are in accordance with the study done by Andersen MB et al.[9] Our study results are in accordance with the local study who reported high perinatal mortality in twin pregnancies and prematurity was the important cause.[8]

Admission in nursery was the second most complication in our study. This is in contrast to study done by Cassell KA et al[10] in which the rate of admission in nursery was 51.4%. This may be because in their study they included triplets and quadruplets and with increasing number of gestation the maternal and fetal complications also increases leading to an increase rate of admission in nursery.

In our study 1.6% of the fetuses had congenital anomaly while study by Naheed I et al[11] had found the rate to be 1.5%. Usually congenital anomalies mentioned in literature, accounted for 5% of the total neonatal occurrences.[12] This could be due to various number of patients selected in the study.

In our study it was observed that preterm labour and complications of prematurity are the most significant factor related with increased perinatal mortality. The other main features that lead to poor perinatal outcome in twin pregnancies are asphyxia neonatorum, RDS, congenital anomalies and septicemia. [8]

In our study results showed that intrauterine growth retardation (IUGR) was recorded in 16.7% cases, still birth in 12.6% cases, fetal distress in 1.6% cases and mortality in single fetus was 0.7% cases. While in a study the most frequent neonatal occurrences were respiratory diseases (65.1%), jaundice (38.4%), metabolic disorders (13%) and neurologic diseases (9.0%).[12]

CONCLUSIONS

Multiple gestations are high risk pregnancies, which may be complicated by prematurity, admission in nursery, low birth weight infants, intrauterine growth retardation, neonatal morbidity and mortality as showed in the results of our study.

First trimester screening for fetal congenital anomalies and regular intensive fetal monitoring will allow obstetrician for detection of fetal complication like IUGR malpresentation etc. thus improving fetal outcome.

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