

COMPLICATIONS OF TWIN PREGNANCY

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ABSTRACT

Objectives: To find out the maternal and fetal complications of twin gestation and to assess the effect of these complications on perinatal outcome.

Material and Methods: This Descriptive study was carried out in Gynae B Unit of Khyber Teaching Hospital, Peshawar from January 2010 to December 2010. A total of 50 patients with twin pregnancy who had completed 28 weeks of twin gestation both booked and emergency admissions were included in the study. Evaluation was done by detailed history and data was collected in a proforma. Antenatal, intrapartum and postnatal complications as well as perinatal mortality and morbidity were calculated.

Results: Out of total of 3951 deliveries, 50 patients with twin gestation were included. 66% were unbooked and 34% were booked belonging to age group of 31-33 years. 68% were multiparous. 52% presented at 37 plus weeks of gestation. 50% were in labour, 32% with PIH, 20% with iron deficiency anemia, 12% with preterm prelabor rupture of membranes, hyperemesis gravidarum 12%, polyhydramnios 8%, antepartum haemorrhage 8%. Fetal complications were prematurity in 50%, co-twin demise in 10%, intrauterine growth restriction 8%, congenital anomalies in 8%. Vaginal delivery occurred in 80% of patients, while 20% had caesarean section. Perinatal mortality rate (PNMR) in terms of gestational age and weight was 360/1000 births. PNMR at 24-28 weeks was 1000/1000, at 33-36 weeks was 521/1000 and was 191/1000 births at 37-40 weeks of gestation. PNMR was highest with birth weights of 1.5 kg i.e., 1000/1000 while it decreased as the birth weight increased i.e. 131/1000 at birth weight of more than 2.5 kg.

Conclusion: Twin pregnancy is a high risk pregnancy and to decrease its maternal and fetal complications it must be diagnosed early, should receive antenatal care and care at delivery. Early hospitalization plays an important role of reducing these complications.

Key Words: Twin, pregnancy, complications, perinatal.

INTRODUCTION

Multiple gestation results from fertilization of two separate ova. In such cases, the fetuses are genetically different dizygotic Dichorionic. It also results from splitting of one embryonic mass to form two or more genetically identical fetuses monozygotic Monochorionic. If splitting occurs after 12th day, it result in conjoint twin.

Incidence of spontaneous multifetal pregnancy is quoted to be 1:80 pregnancies¹. Multifetal pregnancies have increased in incidence by 50% in the developed countries over the last fifteen years which is due to success in the field of In Vitro Fertilization (IVF)². Twins account for 1% of all pregnancies, with two-third being dizygotic and one-third monozygotic³. Incidence varies with ethnic group, parity, method of conception and family history⁴. Without use of ultrasound, about 30% of twin

pregnancies remain undiagnosed⁵. As management depends mainly on chorionicity, which can be determined by ultrasound. Zygosity can be determined through invasive testing with Chorionic Villus Sampling (CVS), amniocentesis or cordocentesis to analyze fetal DNA.

Multiple pregnancies represent a major obstetric and perinatal challenge. It is associated with multiple fetal and maternal complications. Perinatal mortality is five times in twins than in singleton and is more in MC than in DC twins⁶. Women with twin pregnancy need early diagnosis, frequent antenatal visits, proper ante partum and postpartum management to avoid most of the complications and to reduce the perinatal mortality rate. Therefore, we decided to conduct this study to see the complications associated with twin gestation and their effect on perinatal outcome.

MATERIAL AND METHODS

This Descriptive study was conducted in Gynaecology "B" Unit, Khyber Teaching Hospital, Peshawar from January 2010 to December 2010. Fifty patients with twin pregnancy were studied. Sampling technique was Convenience (Non-probability).

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Inclusion criteria was all patients with twin pregnancy reporting to antenatal clinic, all emergency admissions with twin gestation in labour room, Gynae B unit. Exclusion criteria was singleton pregnancy, medical diseases like diabetes and hypertension.

Specially designed proforma used to record relevant data of each patient, like age, parity, gestational age, personal and family history of twins, use of ovulation induction drugs, Baseline investigations including blood grouping and Rh factor, urine complete examination, CBC, RBS. Specific tests like RBC indices, LFT, RFT, PT, APTT, Platelet count done according to individual cases. Ultrasound done for gestational age, number of fetuses, placental site, number, amount of liquor and congenital anomaly.

Antenatal booking was done in the first trimester of gestation and admitted, if there was any complication. Progress of labour recorded on partogram. Paediatrician and Anaesthetist were informed about patient. Delivery of 1st twin was managed similar to that of singleton pregnancy under normal obstetric condition. For delivery of 2nd twin, pelvic examination was performed to confirm lie, presentation and to exclude cord prolapse if membranes are ruptured. In the absence of fetal distress and hemorrhage, labour augmented with oxytocin infusion. An interval of 30 minutes was allowed between delivery of first and second twin and strict fetal monitoring during this period.

If twin B presented as cephalic, was allowed to be deliver but if signs of fetal distress, delivery expedited. If twin B presented as breech, delivered by assisted breech vaginal delivery. If fetal distress, total breech extraction was done. In case twin B presented as transverse, internal podalic version and breech extraction was carried out. Caesarean section for both twins done in case of maternal or fetal distress or either twin malpresentation. Third stage of labour actively managed. Placenta thoroughly examined to determine the chorionicity.

Data was analyzed using SPSS version 16. Descriptive statistics were used to calculate mean and standard deviation of age. Frequency and percentage was calculated for type of admission, gestational age of patients, gravidity of patient, use of ovulation induction drugs, personal history of twins, family history of twins, maternal and fetal complications of twin gestation, mode of delivery, postpartum haemorrhage, and morphological examination of placenta. Chi-Square was used to compare the perinatal death of twin I and twin II with gestational age at 28-32 weeks, 33-36 weeks, 37-40 weeks respectively and to compare perinatal death of twin I and twin II with neonatal birth weight of less than 1.5 kg, 1.6-2.5 kg and 2.6-3.5 kg. P value of <0.05 was considered significant. Results were interpreted by

identifying the complications and calculating the effect of these on perinatal outcome related to twin gestation.

RESULTS

Out of 3951 patients during study period, 50 women with twin pregnancy, of gestation more than 28 weeks were included. Out of these, 33(66%) patients were unbooked with minimal or no antenatal record while 17(34%) were booked patients. Age ranges of patients with twin pregnancy are shown in Table 1 while the maternal & foetal complications are shown in Table 2.

Among these, 24 (48%) twin pairs presented as cephalic-cephalic, 4(8%) presented as cephalic-breech, 3(6%) presented as cephalic-transverse,

Table1: Age of patients with twin pregnancy (n=50)

Age (in years)	No. of patients and percentage
20–25	14(28%)
26–30	13(26%)
31–35	20(40%)
36 +	3(6%)

Table 2: Maternal and fetal complications of twin pregnancy (n=50)

Complications	No. of patients and percentage
Preterm labour	25(50%)
Pregnancy induced hypertension	16(32%)
Iron deficiency anemia	10(20%)
Preterm Prelabour Rupture of Membranes	6(12%)
Hyperemesis gravidarum	5(10%)
Antepartum haemorrhage	4(8%)
Polyhydramnios	4(8%)
Fetal complications of twin pregnancy	
Complications	No. of patients and percentage
Prematurity	25(50%)
Co-twin demise	5(10%)
Intrauterine growth restriction	4(8%)
Congenital anomalies	4(8%)

Table 3: Causes of perinatal deaths in twin pregnancy (n=100)

	TWIN I	TWIN II
*ANN +Prematurity	6(12%)	9(18%)
*ANN +Sepsis	4 (8%)	4(8%)
Congenital Anomalies	2(4%)	2(4%)
Still births	4(8%)	5(10%)
Total No. of deaths	16	20

*Asphyxia Neonatorum

Table 4: Perinatal outcome in relation to birth weight of neonates (n=100)

Birth weight (kg)	Twin I			Twin II			PNMR
	No	N	PD	No	N	PD	
<1.5	1	0	1		0	1	1000/1000
1.6-2.5	30	17	13	30	14	16	483/1000
2.6-3.5	19	17	2	19	16	3	131/1000
Total	50	34	16	50	30	20	
PNMR	320/1000			400/1000			

PNMR (Mean) =360/1000

*P value <0.05 when compared with other group with same twin birth weight.

10(12%) presented as breech-cephalic, 8(16%) presented as breech-breech and 1(2%) twin pair presented as transverse-cephalic. None of the case of transverse-breech presentation reported.

In 24 (48%) patients with cephalic-cephalic presentation, 23(95%) had vaginal delivery and 1 had caesarean section for Intra Uterine Growth Restriction (IUGR) with Pregnancy Induced Hypertension (PIH). In 4(8%) cephalic-breech presentation, all had vaginal deliveries along with breech vaginal delivery of twin II. In 3(6%) cephalic-transverse presentation, 2 (66%) patients had vaginal delivery, in which twin I was delivered vaginally and internal podalic version and total breech extraction was done for twin II. One patient had emergency caesarean section for retained second twin.

Causes of Perinatal deaths in twin pregnancy are shown in the Table 3, while the results of perinatal outcome in relation to birth weight of neonates are tabulated in Table 4.

DISCUSSION

Twin pregnancy is a high risk pregnancy associated with increased fetomaternal morbidity and mortality. Early diagnosis, regular antenatal visits,

hospital delivery can avoid most of the complications, ensuring optimal outcome for the mother and the fetuses. 34% patients were between booked and unbooked patients showed that there was a major lack of antenatal attendance, which can lead to various complications during pregnancy and their magnitude mounts even higher in twin pregnancy. In our 50 patients, family history of twinning on the maternal side was present in 30% patients. Spontaneous ovulation occurred in 74% of twin pregnancy and the incidence of ovulation induction was 26%. In study by Catalán Bl et al assisted ovulation in 5.1% of patients.⁷

Gestation at <32 weeks, PIH, Preterm Prelabour Rupture of Membranes (PPROM) were the factors associated more strongly with poor perinatal outcomes in our study and this correlated with the study by Mazhar SB, where these factors were associated with high perinatal mortality in children of twin pregnancy⁸. Preterm delivery is almost 6 times more common in twins compared with singleton births⁹. The mean gestational age at delivery was 36.4 weeks and preterm labour was reported in 50% patients. Most of admissions in neonatal nursery and neonatal deaths were due to complications of prematurity.

Hypertensive disorders of pregnancy are more likely to develop with multiple fetuses. In our study, majority of twin pregnancies occurred in multipara 68%. Pregnancy induced hypertension occurred in 16% patients. Rizwan N, reported 31.2% cases of hypertension with in twin pregnancy¹⁰. Frequency in our study is 32%.

Worldwide, Iron deficiency is the most common cause of anemia in pregnancy¹¹. In this study, anemia was present in 20% of patients and is due to both remarkable increase in maternal blood volume and increased iron and folate requirement imposed by a second fetus. A local study reported 74.6% incidence of anemia in women with twin pregnancy⁹. Hydramnios in twin gestation negatively impacts gestational age at delivery and maternal renal function may become seriously impaired, most likely as a consequence of obstructed uropathy¹². The incidence of perinatal mortality is significantly increased in the presence of hydramnios. 6% of patients had hydramnios in our study.

Antepartum haemorrhage occurred in 8% of patients. Rizwan N, reported antepartum haemorrhage in 6.2% of patients¹⁰. These results were comparable with what we found in our study. Markov D et al found that the postpartum haemorrhage occurred in 3% of twin pregnancies¹³. These results were highly compared with what we found 12%. This could only be due to uterine over distension and large placental bed in twin pregnancy.

In our study, when the progress of labour was satisfactory, first twin presenting as breech were allowed to be vaginally delivered in 66% of patients. This is to avoid further complications, as most of the patients do not practice family planning and certainly

got pregnant within the next few months. As antenatal care is almost nonexistent in our rural population, giving a uterine scar to a mother is more dangerous than the stress of vaginal delivery to her twin babies. Moreover, the uterine incision for premature infants in malpresentation is frequently a classical one, which necessitates a need for repeat caesarean section. If the fetuses are too premature with malpresentation, than every case needs individual decision.

For second twin presenting as transverse, Internal podalic version and breech extraction are considered safer than external cephalic version. As protracted interdelivery interval carries risk of placental separation and cervical contraction, prompt trial of version of second twin followed by vaginal breech extraction under anaesthesia might improve perinatal outcome.⁴ The use of elective caesarean section in this group of babies has not been subjected to randomized controlled studies of sufficient power to determine the best method of delivery of second twin⁴.

PNMR regarding the birth weight was highest at 1.5 kg which shows an inverse relationship of PNMR and birth weight of neonates. It is evident from our study that the neonatal birth weights play an important role for survival in early neonatal period as respiratory, cardiovascular, sensory and neuronal systems are mature in higher birth weight neonates. It was seen during study that the single most important factor associated with increased perinatal mortality was preterm labour and complications of prematurity. RDS, septicemia, asphyxia neonatorum, and congenital anomalies are the other important factors leading to poor perinatal outcome in twin pregnancies. The results of this study are comparable to an international study by Andersen MB et al in 2012¹⁶. This study showed higher PNMR in twin pregnancies and most important cause was prematurity.

CONCLUSION

There is need to identify twin pregnancies early in order to provide good prenatal care and deliver them in well equipped hospital unit where good neonatal resuscitative facilities are available.

RECOMMENDATIONS

Our general public needs to be educated about the importance of early antenatal booking and proper follow up to reduce the risk to the mother and the babies. There should be a comprehensive programme to make Dais and the Trained Birth Attendants (TBAs) aware of the complications associated with twin gestation and the need of proper referral to appropriate centres.

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