

Maternal and Fetal Complications in Multiple Pregnancies

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Objective: To analyze the fetomaternal complications in multiple pregnancy and strategy for its prevention and treatment.

Design: Descriptive study **Place and Duration of Study:** This study was carried out at DHQ Hospital, Faisalabad over a period of one year from December 2004 to December 2005. **Methods:** There were 60 cases of multiple pregnancies out of a total 3000 pregnant women. Patients with multiple gestations were referred from emergency as well as from outpatient department to labor room and out come and any associated complications were recorded. **Result:** During one year study period there were 60 cases of multiple pregnancy. Most of multiple pregnancies (91%) were spontaneous. 96% patients were carrying twin pregnancies while 2 cases (3.3%) of triplet pregnancies were recorded. Recorded maternofetal complications of multiple pregnancies were miscarriage (5%), preterm delivery (33.3%), pregnancy induced hypertension, pre-eclampsia, eclampsia (33.3%), intrauterine growth restriction (16.6%), intrauterine death (6.6%) and postpartum haemorrhage (6%). 35% delivered vaginally while 41.6% were delivered by caesarean section. **Conclusion:** Multiple pregnancies are high risk pregnancies with associated fetomaternal morbidity and mortality due to accompanying complications. Chances of a successful outcome may be improved by appropriate preventive, diagnostic and management strategies, by the availability of specific skill and experience and by a multi-disciplinary approach.

Key words: Multiple gestation, fetal complications, maternal complications, prevention and management.

Multiple Pregnancy is a pregnancy with two or more fetuses. Incidence of multiple births has increased dramatically over the past few decade from 1/100 to about 1/60 to 1/70 deliveries, with a 40% increase in twinning rates and three to fourfold rise in higher order multiple birth. Fertility treatment causing ovarian stimulation often result in multiple, typically heterozygous fetuses. Like wise in vitro fertilization is associated with multiple fertilized eggs to increase the chance of successful implantation^{1,2}. The number of twin deliveries rose 52 percent and number of triplets and other higher order multiple births soared 40.4%. Singleton births, in contrast, rose only 6%. In twin pregnancies the frequency of monozygotic twin births is relatively constant world wide, at approximately one set per 250 births and is largely independent of race, heredity, age and parity. Incidence of dizygotic twinning is influenced remarkably by race, heredity, maternal age, parity and especially fertility drugs in Nigeria.

This extraordinary increase in multiple births is a public health concern because these infants are less likely to survive and more likely to suffer life long disability. All types of multiple pregnancies are associated with high rates of preterm delivery, low birth weight and the increase cost of caring for preterm infants³. Twin have a four fold and triplets a 20 fold, increase in cerebral palsy compared with singletons. The overall risks of mendelian and chromosomal abnormality increases with the number of fetuses². In twins, the risk of fetal anomaly in atleast one fetus is more than twice than that of singletons. Premature delivery is another risk associated with multiple pregnancies that increases the risk of infant morbidity and mortality as is spontaneous abortion (both early and late) and fetal growth retardation⁴. Potential maternal complications associated with multiple pregnancy are

increased risk of pregnancy induced hypertension, preeclampsia, polyhydramnios and server anemia, as well as those general risks associated with long hospitalization⁵.

Psycho-social disturbances to the mother are associated with the above mentioned risk factors that increase with multiple pregnancies, especially in light of the fact that many of the women who experience multiple pregnancies have undergone prolonged and emotionally distressing treatment of infertility. As multiple pregnancies have very serious implications for the mother and her offspring, and for the family and the community and health service resources. The aims and objectives of this study are to detect maternal and fetal complications in multiple pregnancies, and their prevention and treatment.

Material and methods

This study was carried out in DHQ Hospital, Faisalabad from December 2004 to December 2005 on pregnant patients presented with multiple gestation. DHQ hospital is main referral hospital in the region where about 3000 women are delivered each year. Out of these 3000 deliveries, 60 cases were of multiple pregnancies. Patients were referred from emergency as well as from Outpatient Department to Labour room and antenatal ward. Patient age, parity, presenting complaints i.e. history of uterine contraction, per-vaginum leaking and hypertension were noted. Family history of multiple gestations and any history of ovulation induction were also recorded. General physical examination was carried out, and abdominal examination, regarding Symphysial fundal height, number, lie and presentation of fetuses noted. Baseline investigation i.e. blood group, complete examination (C/E) urine, random blood sugar and blood group were done. Ultrasonography was carried out for the confirmation of multiple gestation, their lie, presentation, placental

localization and exclusion of congenital anomalies. Management of antenatally admitted patients, their mode of delivery, outcome, and any associated complications were recorded. All these informations were recorded on a specially designed performa and statistical analysis was done. It was a descriptive study and study population was followed in a prospective manner.

Results

During one year study period there were 60 cases of multiple pregnancy out of 3000 deliveries. Calculated incidence of multiple gestation was 2%. In 40 (66%) cases of multiple gestations occurred in ages between 28-35 years. 20 (33.3%) patients were primigravida. In 15(25%) cases gravidity ranged between four and seven and 25(41.6%) women presented in their second pregnancy. Majority of patients were unbooked and belonged to lower socio-economic class. Most of multiple pregnancies (91%) were spontaneous. History of ovulation induction was present in 5 (8.1%) cases. Most of multiple pregnancies 58 cases (96%) were twin gestation. Two cases (3.3%) of triplet pregnancies were recorded. These pregnancies were spontaneous and occurred in younger age group. Medical and obstetrical complications associated with multiple pregnancies were:- miscarriage in 3 (5%) cases, iron deficiency anemia in 50 (83%) cases, pre-term delivery in 20 (33.3%) patients, pregnancy induced hypertension or PIH, pre-eclampsia, eclampsia in 20 (33.3%) patients, intrauterine growth restriction in 10(16.6%) cases. Intrauterine death of both fetuses and single foetal death in 4(6.6%) cases, and postpartum haemorrhage in 6(10%) cases. Sub-total hysterectomy, application of B-Lynch suture and uterine artery ligation were performed in 4(6.6%) cases of postpartum hemorrhage due to failed medical treatment. 35(58.3%) delivered vaginally while mode of delivery was caesarean section in 25 (41.6%) cases.

Age distribution in multiple pregnancy

Age group	=n	%age
< 20 yrs.	2	3.3
Between 20-27 Yrs.	6	10
Between 28-35	40	66
> 40 Yrs.	2	3.3%

Gravidity distribution in multiple pregnancy

Gravidity	=n	%age
Primigravida	20	33.3
Gravida two	25	41.6
Between gravida four & seven.	15	25

Demographic Characteristics of the patient

Booked	=n	%age
Unbooked	50	83.3
Booked	10	16.6

Medical and Obstetrical Complication in Multiple Pregnancy

Complications	=n	%age
Miscarriage	3	5
Anaemia	50	83
Preterm delivery	20	33.3
Pregnancy induced Hypertension, preeclampsia & eclampsia	20	33.3
IUGR	10	16.6
IUD	4	6.6
Post-partum haemorrhage	6	10

Mode of delivery in multiple gestations:

Vaginal delivery	35 cases	58.3%
Caeserean section	25 cases	41.6%

Discussion

Multiple pregnancy has very serious implications for the mother and her offspring, for the family and the community and for health service resources. To give example:- the maternal mortality may increase 3 fold for twin pregnancy and even more for triplet pregnancies. The perinatal mortality rises to 9 fold and the incidence of cerebral palsy 16 fold⁶. The frequency of twin births in tertiary centers ranges from 1 in 25 to 1 in 100 with the highest rate reflecting the hospital referral population rather than the true rate for the population. The calculated incidence of multiple pregnancy in our study was 2%. Possible maternal complications of multiple pregnancy include miscarriage, anemia, high blood pressure and organ damage (preeclampsia), increased chance of casarean delivery, problems with placenta such as placental abruption or placenta previa and too much amniotic fluid (polyhydramnios). Common fetal complications include:- increased chance of giving birth before 37 weeks (premature delivery), which poses greater risks of illness, disability and death. Less common fetal complications include:- difference in size of fetuses (discordance) usually because of twin to twin transfusion, birth defects and genetic disorders¹. Miscarriage is more common in multiple pregnancies than in singleton pregnancy. The rate of missed abortion is approximately twice as high as the 2% rate seen in singleton at 10 to 14 weeks gestation⁷. Miscarriage rate was 5% in our study. Anaemia is more frequent in multiple gestations, & the greater increase in blood volume compared with the red cell mass decreases the haemoglobin concentration, producing a more pronounced decrease in haemoglobin compared with singleton pregnancy⁸. Anaemia was diagnosed in 83% of our patients. Beside the physiological changes in blood volume and red cell mass, other contributing factors for anemia were malnutrition due to poverty and multigravidity. Premature delivery is another risk associated with multiple pregnancy that increases the risk of infant morbidity & mortality. In the Scottish Twin study, preterm birth occurred in 43.6% of all twin

gestations compared with 5.6% of singleton gestations⁹. In our study 33.3% of multiple gestations ended up in premature deliveries. This difference of 10.3% in our study may be due to rural deliveries which are not reported or recorded.

The incidence of pregnancy induced hypertension, precalmpsia and eclampsia is increased in multiple pregnancy^{10,11}. In 33.3% of patients in our study had pregnancy induced hypertension or PIH. The incidence of small for gestational age infants or IUGR (birth weight < 10th percentile for gestation age standards in pregnancy) is common in multiple pregnancy. Rate vary between populations from 25% to 33%^{12,13}. In 16.6% twin pregnancies in our study had growth restriction or IUGR. This difference may be due to late booking so that growth restriction could not be diagnosed. Twins are more frequently delivered by Casarian section than singletons, either as an elective procedure or as an emergency procedure before or after the birth of the first of the twins. Presentation and gestational age influences this likelihood¹⁴. In 41.6% cases in our study were delivered by caesarean section. Indications of caesarean section were non vertex first twins, triplet gestation and history of severe pregnancy induced hypertension or PIH. Risk of postpartum hemorrhage is 2 times greater in multiple pregnancy because of increased placental site, uterine overdistention, and a greater tendency to uterine atony¹⁵.

10% of our cases developed postpartum hemorrhage, 6.6% of them ended in subtotal hysterectomy, application of B-lynch suture and uterine artery ligation due to failed medical treatment.

Women and infants of a multiple pregnancy are recognized to be at increased risk of adverse outcome when compared with singletons. Therefore multiple pregnancy represents a challenge for obstetrics and also poses significant psychological, social and economic problems. The chances of a successful outcome may be improved by appropriate preventive, diagnostic and management strategies, & by availability of specific & experienced skill & multi-disciplinary approach.

Conclusion

Multiple pregnancy is a high risk pregnancy due to associated materno-fetal complications. Obstetricians and gynaecologists have an important responsibility to make both the public as well as their patients to be aware of the many hazards associated with multiple pregnancy and higher order pregnancies. In addition they must make them aware that the high risk nature of multiple pregnancies

requires an expertise which may be beyond that is available in some rural or smaller town areas.

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