

A Clinical Study of FETO Maternal Outcome in Multiple Pregnancy

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Abstract:-

BACKGROUND:- Multiple pregnancy is considered a high risk for obstetric complications such as spontaneous abortion, hypertensive disorders, placenta previa, anemia, postpartum hemorrhage and fetal complications like malformations, pre-maturity, low birth weight, intrauterine growth restriction, neonatal morbidity and high perinatal, neonatal and infant mortality. Due to inherent biological factors, twin pregnancies have increased rates of obstetric and perinatal complications.¹⁻³ WHO Global Survey on Maternal and Perinatal Health (2004–2008), where twin pregnancy was a significant, independent risk factor for maternal and perinatal morbidity and mortality compared to singleton pregnancies⁴. The incidence of spontaneous twinning differs according to country and ethnicity. Triplets are estimated to occur in 1 out of [86]² pregnancies and quadruplets in 1 out of [86]³ pregnancies in the United States⁵. The highest burden of multiple births has been found in subSaharan Africa, with an average twinning rate of 20 per 1,000 deliveries compared to 10 per 1,000 deliveries in Europe and around 5-6 per 1,000 deliveries in Asia^{6,7}. Nigeria has the highest prevalence of multiple births worldwide⁶⁻⁸. Globally, the incidence of multiple births is increasing; since the early 1990s there have been an increased number of pregnancies later in life, and increased use of assisted reproductive technology (ART) such as induction of ovulation and in vitro fertilization⁹⁻¹³.

AIM:-

- To study the maternal and perinatal outcomes associated with multiple pregnancies.

OBJECTIVES :-

- To study the obstetric problems in multiple pregnancy.
- To study the causative factors of multiple pregnancy.

METHODS :-

The study was conducted in Gandhi hospital, Secunderabad from November 2017 to May 2019. Women admitted to the antenatal ward and labor room after clinical or ultrasound diagnosis of multiple gestations were included in the present study.

RESULTS :-

The mean age of subjects was 25.9 years. 62% were multigravida and 38 % were primigravida. 82% had spontaneous conception, 18% had taken infertility treatment. 70% were DCDA twins, 28% were MCDA, 2% were MCMA. 48% delivered vaginally, 52% delivered by LSCS. The commonest intrapartum fetal presentation is vertex vertex (50%). Majority of them (60%) delivered at 34-37 weeks. 80% of the women had antenatal complications. 52% of the babies were preterm and 88% of unbooked cases had complications.

CONCLUSION :-

Multiple pregnancies are a significant risk factor for maternal and perinatal morbidity and mortality. The knowledge of maternal and fetal complications helps in better surveillance, and in prevention of the morbidity and adverse outcome. Hence the need for better obstetric care, neonatal care, health services to get a better fruitful outcome.

Keywords:- Multiple pregnancy, maternal outcome, fetal outcome.

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I. Introduction:-

Multiple pregnancy means the simultaneous development of more than one fetus in the uterus. Simultaneous development of two fetuses (twins) is the commonest type, although rarely development of three fetuses (triplets), four fetuses (quadruplets), five fetuses (quintuplets), or six fetuses (sextuplets) may also occur¹⁴. The number of multiple pregnancies is rising as a proportion of all pregnancies. The rising age at childbirth is increasing the rate of spontaneous multiple pregnancy as well as the use of assisted conception¹⁵⁻¹⁷. Multiple pregnancies in low resource settings pose higher fetomaternal risks due to a scarcity of human and material resources, which translate into insufficient care during pregnancy and delivery. This is particularly true of central African countries with high twinning rates and limited health infrastructure¹⁸. Recent secondary analysis from the WHO Multicountry Survey on Maternal and Newborn Health (WHOMCS, 2010–2011) explored the association of twin pregnancy with adverse maternal outcomes using the MNM (maternal near miss) criteria, reporting a 3 times higher risk of MNM and a 4 times higher risk of MD (maternal death) among twin pregnancy than in singleton¹⁹. Therefore; multiple pregnancies in developing countries expose mother and infants to extremely high risks. Even with optimal care, including both prenatal and perinatal care, the risk of maternal as well as neonatal morbidity and mortality for multiple gestations is increased. Compared with singletons, babies from multiple pregnancies have substantially higher rates of preterm birth, perinatal mortality and long term neuro-developmental impairments²⁰⁻²².

AIMS:-

- To study the maternal and perinatal outcomes associated with multiple pregnancies.

OBJECTIVES :-

- To study the obstetric problems in multiple pregnancy.
- To study the causative factors of multiple pregnancy.

II. Materials And Methods:-

The present study was carried out over a period of 18 months at Gandhi Hospital, Secunderabad. It is a tertiary care hospital and a major referral centre for high risk obstetrics in Telangana State.

Duration of study: November 2017 – May 2019.

Type of study: Prospective observational study.

Sample size: 100.

100 subjects were included in the study based on inclusion criteria. Informed consent was taken and Complete history was taken including the history of multiple pregnancies in the previous pregnancy or in the family and history of taking ovulation inducing drugs was recorded. Clinical examination was done, fetal lie and presentation were noted. Per vaginal examination was performed when the patient was in labor. Complications in the mother during antenatal period like hypertension, polyhydramnios were noted. Intrapartum fetal monitoring was done by intermittent auscultation of the fetal heart sounds. Outcome of pregnancy was noted as either, preterm delivery, full term vaginal delivery, instrumental delivery or cesarean section. Indication for cesarean section was recorded. Incidence of Post partum hemorrhage, type of placenta, and presence of retro placental clots was noted. Fetal outcome, gestational age at birth, weight at birth, APGAR scores and requirement for NICU admission were analysed.

INCLUSION CRITERIA:-

Women admitted to the antenatal ward and labor room after clinical or ultrasound diagnosis of multiple gestations

EXCLUSION CRITERIA:-

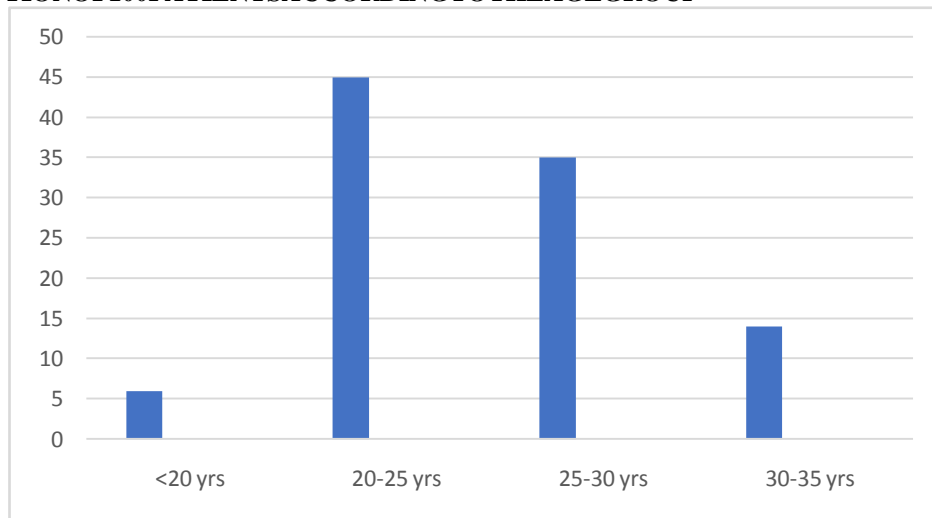
1. Pre existing Medical disorders complicating pregnancies.
2. Gestational age <28 weeks.

RESULTS AND ANALYSIS:-

MATERNAL AGE WISE DISTRIBUTION:-

In the present study 6% of subjects were in Age group <20 years, 45% belonged to age group 20-25 years, 35% belonged to age group 25-30 years and 14% belonged to age group 30-35 years.. The mean age of subjects was 25.9 years.

DISTRIBUTION OF 100 PATIENTS ACCORDING TO THE AGE GROUP

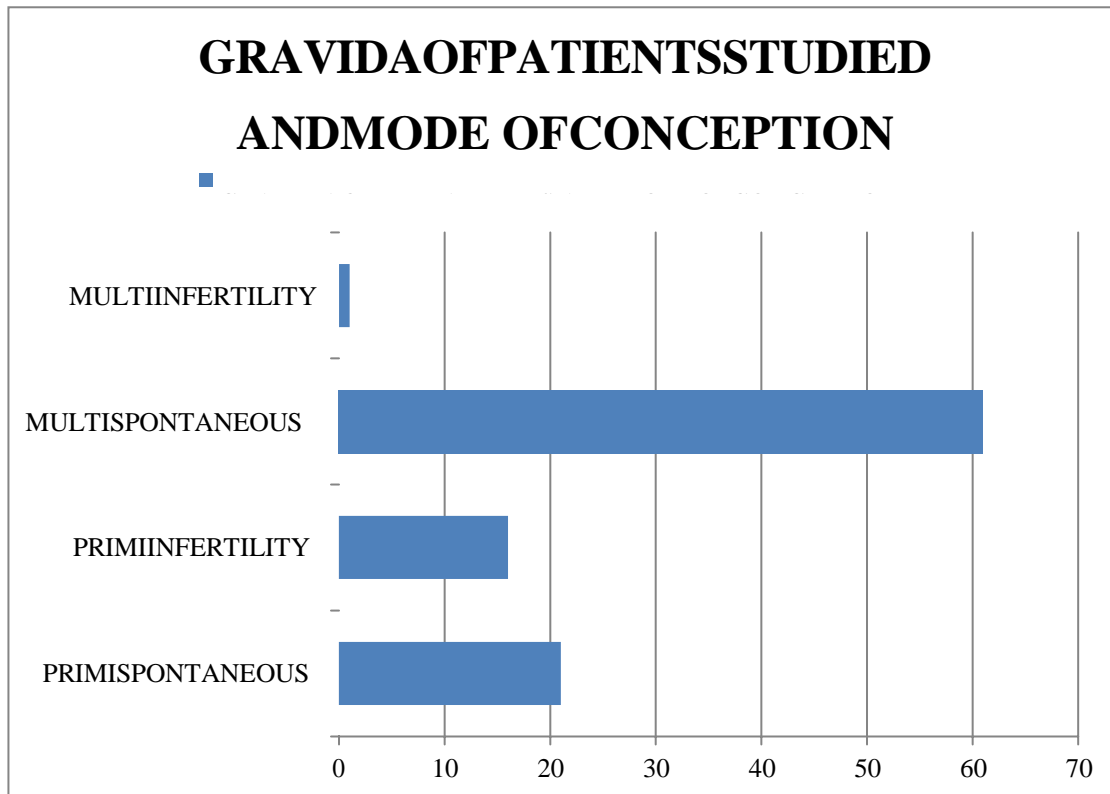


GRAVIDA AND MODE OF CONCEPTION :-

62% were multigravida and 38 % were primigravida.. 82% had spontaneous conception, 18% had taken infertility treatment (Out of 18 women, 13 by ovulation induction, 3 by IVF, 2 by IUI).

TABLE – 1 – PARITY OF THE PATIENTS STUDIED WITH MODE OF CONCEPTION

Parity	Mode of conception		Total
	Spontaneous	Infertility	
Primigravida	21	17	38
Multigravida	61	01	62



PERCENTAGE OF CASES ACCORDING TO CHORIONICITY:-

In this study 70% were DCDA twins, 28% were MCDA twins, 2% were MCMA.

TABLE – 2 CHORIONICITY AND FREQUENCY

CHORIONICITY	CASES	PERCENTAGE
DCDA	78	78
MCDA	20	20
MCMA	2	2

MODE OF DELIVERY:-

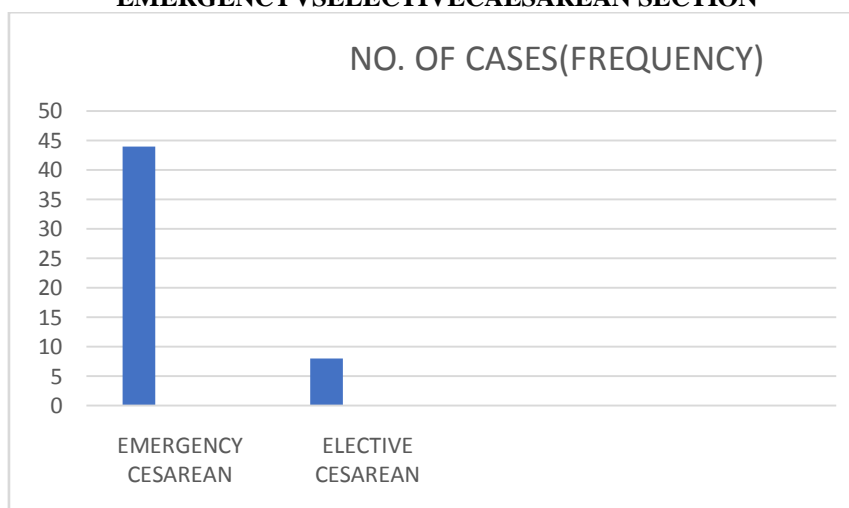
48% delivered vaginally, 52% delivered by LSCS indications being non vertex presentation (34.6%), previous LSCS (36.5%), fetal distress (15.3%), others (13.4%).

TABLE – 3 – MODEOFDELIVERY

MODE OF DELIVERY	Number	Percentage
Vaginal	48	48
Cesarean	52	52

Indication	Number	Percentage
non vertex presentation	18	34.6
Prev lscs	19	36.5
Fetal distress	8	15.3
Others (CPP,IE,APE)	7	13.4

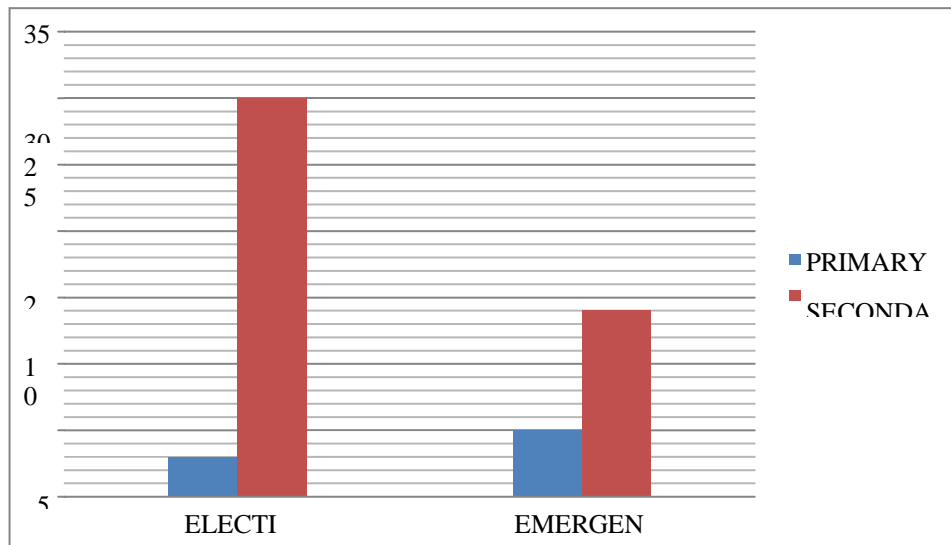
EMERGENCYVSELECTIVECAESAREAN SECTION



CAESAREAN SECTION:ELECTIVEVSEMERGENCYANDPRIMARYVSSECONDARY

	ELECTIVE	EMERGENCY	Total
PRIMARY	3	30	33
SECONDARY	5	14	19
Total	8	44	

COMPOSITEGRAPHOFCAESAREANSECTIONCASES



DISTRIBUTION OF PATIENTS BY INTRAPARTUM PRESENTATION:-

The commonest intrapartum fetal presentation is vertex-vertex (50%) followed by vertex- breech (19%), breech vertex (14%) and breech-breech (8%) respectively.

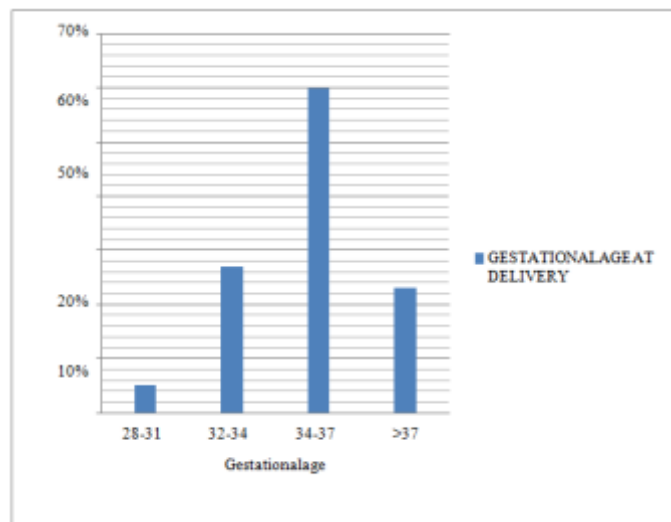
TABLE – 4– DISTRIBUTION OF PATIENTS BY INTRAPARTUM FETAL PRESENTATION

Presentation	Number	Percentage
Vertex-vertex	50	50
Vertex-breech	19	19
Vertex-transverse	04	04
Breech-vertex	14	14
Breech-breech	08	08
Breech-transverse	03	03
Both transverse	02	02

GESTATIONAL AGE AT DELIVERY:-

5% delivered at 28-31 weeks, 27 % delivered at 32- 34 weeks, 60 % delivered at 34-37 weeks, 23% delivered at >37 weeks.

CASES ACCORDING TO GESTATIONAL AGE AT DELIVERY



MATERNAL COMPLICATIONS:-

80% of the women had antenatal complications. Most of the women had more than 1 complication. Anemia and preterm labor in our study is associated with pre eclampsia and eclampsia.

TABLE – 5– MATERNAL COMPLICATIONS

COMPLICATIONS	NUMBER
Preterm labor (spontaneous and induced)	52(34+18)
Hypertensive(gestationalandpreeclampsia)	24
Eclampsia	04
Anemia	10
PPH	02
GESTDM	01
PPCM	03
PPROM	06
Polyhydramnios	04
Completeplacentaprevia	01
Singlefetaldemise	02

NOTE: Out of 3 patients with PPCM, 1 patient expired.

NEONATAL COMPLICATIONS:-

52% of the babies were preterm. 23% babies had birth wt<1500gm, 30% babies had birth wt 1500-2000gm, 26% babies had birth wt 2000_2500gms, 21% babies had birth wt>2500 gm, 1% both twins IUD, 1% single fetal demise, 14% babies were admitted to NICU, 1% had deformities, still birth of 0.5%, neonatal death of 9.5%.

TABLE – 6 – NEONATAL COMPLICATIONS

	CASES(200)	PERCENTAGE
Pretermbabies	104(52PTL)	52
Wt< 1500gm	46	23
Wt1500-2000gm	60	30
Wt2000 -2500gm	52	26
Wt>2500gm	42	21
BothIUD	02	1
Singlefetaldemise	02	1
Stillbirth	01	0.5
NICUAdmission	28	14
NeonatalDeath	19	9.5
Deformities	02	1
Vanishingtwin	01	0.5

BOOKED AND UNBOOKED CASES WITH PERCENTAGE COMPLICATIONS:-

88% (55 out of 62) of unbooked cases, 65% (25 out of 38) of booked cases had complications.

TABLE – 7 – BOOKEDCASESVS UNBOOKED CASESWITHCOMPLICATIONS.

NO.OFCASES	BOOKED	UNBOOKED
Total	38	62
Complicated	25	55
Uncomplicated	13	07
%ofcomplicatedcases	65%	88%

III. Discussion :-

Multiple pregnancies are regarded to be unfavorable, probably due to the increased maternal morbidity and mortality and poor perinatal outcome, long term developmental issues. In this prospective study which was conducted during 18 months study period, 100 cases of twin pregnancies were observed, no cases of triplets or quadruplets were reported during this period. Most (62%) of the cases were unbooked and 88% of them (unbooked) had got admitted with some obstetric complications as our institute being a tertiary centre. The percentage of un-booked cases was comparable to the study conducted by Naqvi MM²³ in 2003 at Wah Cantt Hospital, where among 96 cases, 65 patients were un-booked (67.7%). Majority of the women studied, 45% were in age group of 20-25 years. Mean (\bar{x}) age group is 25.9, the same mean maternal age was observed (26yr) in the study conducted by Pandey MR²⁴. Present study shows higher incidence of twins among multigravidas (62%) compared to primi, as supported by study conducted by Chowdhury S²⁵, that twins were more common in multi gravida (64.2%). Out of 100 cases, 82 women conceived spontaneously, 18 by ART. (13 cases were as result of ovulation induction and 3 by IVF and 2 by IUI). As for the maternal complications in this study preterm labor either spontaneous or induced preterm labor was noticed in 52 women. Pre eclampsia was noticed among 30 women. Out of which 4 patients had eclampsia and 1 had PPCM, Pulmonary edema and expired. Severe anaemia was noticed in 10 women, which was treated by blood transfusion. Most of them had more than one complication as anemia, severe pre eclampsia and eclampsia, anemia with pre term labor. The incidence of preterm delivery was higher (52%) in the current study as compared to Chowdhury et al²⁵ (44%). However, the incidence reported by Bangalet al²⁶ was much higher (88%). Most of the preterm deliveries occurred at a gestational age of 34 -36 weeks. The average duration of twin pregnancy is 35.5 weeks, this is comparable to the Qazi²⁷ where the average duration of twin pregnancy was 35 weeks. In this study the incidence of anaemia was 10%, Spellacy et al²⁸ found anaemia in 9.4% and Chowdhury et al in 26% of twin pregnancies. There is a considerable improvement in the prenatal care in India which is evidenced by a much lesser incidence of anaemia than it was in the past. Hypertension was seen in 24% which was high compared to that of the Spellacy et al study (12.9%). As this institute being a tertiary multispecialty referral centre with obstetric ICU, each case of eclampsia was a referral case. Postpartum hemorrhage (PPH) occurred in 2% which is less than the expected. The global prevalence of PPH is 6 %²⁹ and the highest burden is experienced in low income countries^{30 - 31}. More than half of the babies were delivered preterm. The incidence of low birth weight babies (of less than 2500 gms) was 79%; however, Bangal et al²⁶ showed an incidence of 82%. In the present study perinatal mortality in the form of neonatal deaths and intrauterine deaths was 39%. Sulthan et al³² reported a perinatal mortality of 11%. Increased perinatal death in our study is due to pre eclampsia complicated by IUGR and preterm deliveries. Perinatal morbidity which required admission in neonatal unit was 30%. Majority of these babies were preterm babies and had complications like IUGR, birth asphyxia and septicemia.

IV. Conclusion :-

During the study period, 100 twin cases were studied; there were no triplets or other higher order pregnancies. 62% were unbooked and 38% were booked. 88% of unbooked and 65% of booked cases developed complications. Majority of women were in the age group of 20 -25 year with mean age deviation 25.9. 62% were multigravida and 38% were primigravida. 82% conceived spontaneously and 18% by ART (ovulation induction, IUI, IVF). 52% delivered by caesarean section and 48% had spontaneous vaginal delivery. Among 52 caesarean deliveries, and emergency and elective were 44 and 8 respectively. Primary caesarean sections and secondary caesarean sections were 33 and 19 cases respectively. Common indications for primary caesarean delivery were non vertex twin, fetal distress. Most of the cases were dichorionic (70%), monochorionic (30%). Most common maternal complications were preterm labour (52%), hypertension (24%), anemia (10%), eclampsia and others like PPH, PPROM. Majority of preterm deliveries occurred at 34 -37 weeks. Mean gestational age at delivery was 35.5 weeks. Neonatal complications were prematurity, IUGR, septicemia, birth asphyxia and congenital anomalies. Multiple pregnancies are a significant risk factor for maternal and perinatal morbidity and mortality. The knowledge of maternal and fetal complications helps in better surveillance, and in prevention of the morbidity and adverse outcome. Hence the need for better obstetric care, neonatal care, health services to get a better fruitful outcome.

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