

**A study of maternal and perinatal outcome in women with multiple pregnancy in a tertiary care hospital**

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**Abstract**

**Background:** The incidence of twin pregnancy has steadily increased due to rising maternal age and increases demand for fertility treatments. Multifetal pregnancies are associated with higher maternal and perinatal complications.

**Methods:** This is a descriptive observational study carried out in Department of Obstetrics and Gynaecology National Institute of Medical Sciences, Jaipur Rajasthan, over the period of two years i.e. May 2022 to April 2024.

**Result:** The incidence of multiple pregnancies is 25.68/1000 deliveries, 58.76% were Multigravida, 93.47% delivered preterm, vaginal delivery in 96.98%, anemia was noted in 70.85% cases. The incidence of PIH, eclampsia and APH were 24.12%, 0.5% and 4.02% respectively. 19.6% of cases presented with PROM. PPH was noted in 11.56% cases. No maternal mortality was reported. 50% of babies had APGAR> 7 out of which

45.9% required NICU admission. Early neonatal deaths were reported in 30.5% cases. RDS was noted in 7.5% of total cases. One case each of TTTS, TRAP and conjoined twins were found. Discordant twin incidence was 7%. IUD was noted in 4% of total cases.

**Conclusion:** Pregnant women with multiple pregnancy were more prone to maternal and fetal complications. So, regular followed up in a well-equipped set up and antenatal care, close observation with obstetric consultation is necessary for a healthy maternal and fetal outcome.

**Keywords:** Multiple Pregnancy, Twin Pregnancy, Maternal Morbidity, Neonatal Morbidity

**Introduction**

Over the last three decades the incidence of twin pregnancy has steadily increased due to rising maternal age and increases demand for fertility treatments [1,2].

Among the reasons for increased number of multiple pregnancies, several factors are taken into consideration. The main one is the use of ART which is probably responsible; the other is the more advanced age of women giving birth, which accounts for approximately one quarter of the increases [3-8].

The incidence of multiple pregnancy varies considerably in different parts of the world and showed important changes over time. The incidence is higher in Nigeria i.e. 54/1000 live births. In India, the incidence is about 11.4/1000 live births while the incidence of monozygotic twins remains constant throughout the world being 1 in 250. Dizygotic twins which are responsible for a wide range of variation [9].

A multiple pregnancy is associated with an increased risk of its abnormal course. This mostly applies to preeclampsia, Diabetes, iron deficiency anemia, antepartum hemorrhage, postpartum hemorrhage, premature rupture of membrane, preterm Birth and NICU admission that affects 50-60% of twin pregnancy. For newborns, the risk mainly concerns LBW < 2500gms and the resulting perinatal death. [5,10-14].

Twin pregnancy can present significant challenges with a 6-fold increase in mortality and a 5-fold increase in long-term handicap compared to singleton pregnancies. This worsened perinatal mortality is often secondary to preterm birth and fetal growth restriction. [15].

The complications of monochorionic twin pregnancies, with a single shared placenta pose an even greater management concern with higher rates of perinatal mortality and morbidity than dichorionic twins. [16, 17]

The rate of perinatal mortality is 2-3 times higher in twins than among singleton newborn infants, primarily due to preterm birth, fetal growth restriction, LBW and intrapartum asphyxia [18,19]

Studies on mortality, morbidity and outcome of twin pregnancies have not been appropriately discussed in literature. Compared to singleton pregnancies, multiple pregnancies are reported to carry higher maternal as well as perinatal mortality and morbidity. Thus, for proper management of women with multiple pregnancies there is a need to understand the outcome of multiple pregnancies.

## **Aims and Objectives**

### **Aim of Study**

The present study was carried out in the Department of Obstetrics and Gynaecology, National Institute of Medical Sciences, Jaipur, Rajasthan, over the period of two years i.e. May 2022 to April 2024.

This study was done to mainly evaluate the maternal and foetal outcome in cases of multiple pregnancies.

### **Objectives**

The present study was conducted with the following objectives-

- To evaluate the incidence of multiple pregnancies.
- To evaluate the maternal morbidity and mortality in cases of multiple pregnancies.
- To evaluate ante partum, intrapartum and postpartum complications in cases of multiple pregnancies
- To evaluate the foetal morbidity and mortality in cases of multiple pregnancies
- To evaluate the causes of stay in NICU if needed.

### **Materials and methods**

**Study site:** The present study was carried out in the Department of Obstetrics and Gynaecology, National Institute of Medical Sciences, Jaipur, Rajasthan, over the period of two years i.e. May 2022 to April 2024.

**Study Population:** Women fulfilling the inclusion criteria and randomly selected were included in this study.

**Study Design:** Descriptive observational study

**Duration of Study:** Study was carried out over the period of two-years May 2022 to April 2024.

**Sample Size:** Sample size was calculated before the initiation of the study and 199 pregnant women were enrolled.

**Inclusion criteria**

- Any booked/ unbooked or referred case of multiple pregnancy.
- Any gravida for any gestation period of multiple pregnancy admitted in the hospital.
- Any postnatal case admitted till 7th postnatal day.

**Exclusion criteria**

- Any singleton pregnancies.
- Any postnatal case admitted after 7th postnatal day.
- Patients with any significant diagnosed medical disorder prior to pregnancies i.e. bronchial asthma, diabetes mellitus, tuberculosis, thyroid disorders, malaria etc.

**Discussion**

This study is done over the period of two years from May 2022 to April 2024. During this period conducted total deliveries were 7750. Out of these 7750 deliveries 197 cases were twins and 2 cases were triplets. So total cases of multiple pregnancies were 199. So total incidence of multiple pregnancies is calculated 25.68 per one thousand deliveries at our hospital during this period. According to study of Enid Simon Chiwanga and associate's incidence of twins was 21 per one thousand births [20].

The incidence of multiple pregnancy in our study is maximum 50.75% in 21–25-years age group. According to Sr. Letisia Markus Gandy maximum twinning rate 53% was observed in 25-34 years age group while 35% cases were in 16-24 years age group and only 12% were in >34 years age group [21]. According to study of Enid Simon

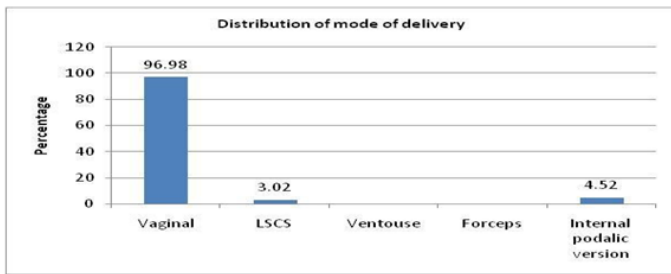
Chiwanga and associates 58.9% twins were observed in 26-35 years age group and 26.4% in 18-25 years age group, 1.3% in 35 years age group [20]. More incidence in younger age group in present study is explainable as early marriages and early child bearing is prevalent in India and many women do not wait for spontaneous conception even for one year of marriage and they opt for ovulation induction at earlier age.

Frequency of multiple pregnancy was 41.21% in primigravida and 58.79% in multigravida in our study. According to Sr. Letisia Markus Gandy 28% multiple pregnancies was present in primigravida and 72% in multigravida [21]. According to study of Enid Simon Chiwanga and associates 27.1% multiple pregnancies found in primigravida and rest in multigravida out of which 29.9% found in para >2 [20]. Therefore, incidence of multiple pregnancy is more in multipara in various studies.

In our study 93.47% cases went in to preterm labour. Majority of cases (42.71%) went in to labour during 33-36 weeks gestational age. During 28- 32 weeks of gestation 32.16% cases went into labour. 6.53% cases went in labour after 36 weeks. According to study of Enid Simon Chiwanga and associates 37.3% delivered before 37 weeks and 61.4% delivered between 37-42 weeks of gestation [20].

In our study 96.98% cases delivered through vaginal delivery and 3.02% through caesarean section and 4.52% delivered by internal podalic version. According to study of Sr. Letisia Markus Gandy 45% cases went through caesarean section while 55% cases delivered vaginally [21].

Graph 1: Mode of delivery



In my study the type of placenta in twin pregnancy, 61.42% were diamniotic- dichorionic, 28.43% were diamniotic- monochorionic and 10.15% in monochorionic- monoamniotic. In both triplet pregnancies placenta wastrichorionic- triamniotic.

In our study anaemia was found in 70.85% cases of multiple pregnancies. Severe anaemia was found in 16.58% cases. According to study of Enid Simon Chiwanga and associate’s anaemia was found in 4% cases [20].

In our study out of total 199 cases 24.12% cases were PIH and 0.5% cases presented as eclampsia. According to study of Sr. Letisia Markus Gandy preeclampsia found in 18% cases and eclampsia found in 5% cases [21].

In our study Abruptio placenta was present in 4.02% cases. According to study of Enid Simon Chiwanga and associates APH was found in 1.7% cases [20].

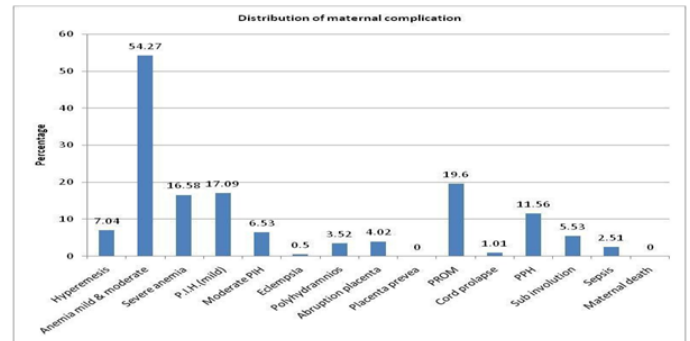
In our study PROM occurred in 19.6% cases. According to study of Sr. Letisia Markus Gandy 11% cases had PROM [21]. According to study of Enid Simon Chiwanga and associates 2.2% cases had PROM [20].

In our study PPH was present in 11.56% cases while according to study of Sr. Letisia Markus Gandy PPH was present in 13% cases [21]. According to study of Enid Simon Chiwanga and associates PPH was present in 1.6% cases [21].

No maternal mortality occurred in cases of multiple pregnancies in our study while according to study of Sr.

Letisia Markus Gandy in 2% cases mortality occurred [21].

Graph 2: Maternal complications

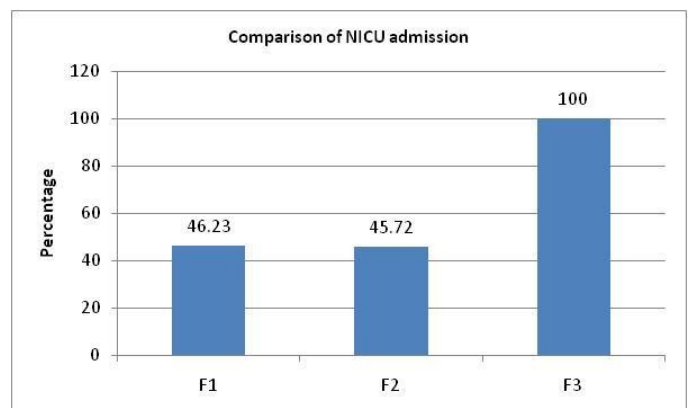


In our study 7.25% babies were having birth weight >2.4 kg while 92.75% babies were having birth weight 2.4 kg while in cases of second babies 41.71% were 2.4 kg. In cases of third babies all two were 1.5-2.4 kg and 7.04% were >2.4 kg while in cases of second babies 41.71% were 2.4 kg. In cases of third babies all two were <1.5kg.

In our study total babies having APGAR score >7 at 5 minute were 50.0% while according to study of Sr. Letisia Markus Gandy 96.5% babies were having APGAR score >7 at 5 minute [21].

46.23% of first babies of our study were admitted in NICU, while 45.72% of second babies were admitted and all two of third babies were admitted.

Graph 3: NICU admissions



In our study total 30.5% babies expired during early neonatal period while according to study of Sr. Letisia

Markus Gandy 9.4% babies expired during perinatal period [21].

Foetal complications in multiple pregnancies are common. In our study RDS developed in 7.5% babies and 4% of total babies were born IUD.

In our study 1 case of TTTS and 1 case of TRAP was reported. The prevalence of TTTS is approximately 1 to 3 per 10,000 births according to Simpson, 2013 [22]. TRAP is a rare—1 in 35,000 births but serious complication of monochorionic multifetal gestation [23].

1.25% babies in our study had congenital malformation. Discordant growth was found in 7%. One case of conjoint twin was reported.

In my study 5.53% of total cases of multiple pregnancy conceived after ART. McClamrock and co-workers (2012) reported rates of twin and higher-order multifoetal pregnancies as high as 28.6 percent and 9.3 percent, respectively [24]. In general, with IVF, the greater the number of embryos that are transferred, the greater the risk of twins and multiple foetuses.

Table 1: Multiple pregnancies after receiving ART

Fertility treatment received	No.	Percent
Yes	11	5.53
No	188	94.47

**Conclusion**

On analysis of the above, it was found that pregnant women with multiple pregnancy were more prone to antenatal, intra-natal and postnatal complications like anaemia, hypertensive disorder, eclampsia, PPH, PROM and preterm labour. Neonatal complications like prematurity, Low birth weight and NICU admission were significantly higher in women with multiple pregnancies. Pregnancy is still associated with many clinical and obstetric complications. Therefore, women with multiple pregnancy should be followed up regularly by an

obstetrician in a well equipped set up with emergency and transport facilities. Hence meticulous antenatal care, close observation with obstetric consultation is necessary for a healthy maternal and fetal outcome. Proper antenatal follow ups and care from early pregnancy, 100% hospital or institutional deliveries with emergency and NICU facilities along with postpartum check ups can significantly reduce maternal and perinatal mortality and morbidity associated with multiple pregnancy

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