International Journal of Clinical Obstetrics and Gynaecology

ISSN (P): 2522-6614
ISSN (E): 2522-6622
Indexing: Embase
Impact Factor (RJIF): 6.71

www.gynaecologyjournal.com
2025;9(5): 92-94
Received: 25-09-2025
Accepted: 10-10-2025

Dr. Chavali Manju Yadav
Assistant Professor, Department of Obstetrics & Gynaecology, Srivenkateshwara Medical College, Tirupati, Andhra Pradesh, India

Dr. Keerthi Sagari AJ
Assistant Professor, Department of Obstetrics & Gynaecology, Srivenkateshwara Medical College, Tirupati, Andhra Pradesh, India

Dr. Geethavani
Assistant Professor, Department of Obstetrics & Gynaecology, Srivenkateshwara Medical College, Tirupati, Andhra Pradesh, India

Dr. Sivaram Rajappagari Sreegouri
Professor, Department of Obstetrics & Gynaecology, Sri Balaji Medical College, Tirupati, Andhra Pradesh, India

Corresponding Author:
Dr. Chavali Manju Yadav
Assistant Professor, Department of Obstetrics & Gynaecology, Srivenkateshwara Medical College, Tirupati, Andhra Pradesh, India

Study on evaluation of maternal and perinatal outcomes in twin gestations in a tertiary care hospital in south India

Chavali Manju Yadav, Keerthi Sagari AJ, Geethavani and Sivaram Rajappagari Sreegouri

DOI: https://doi.org/10.33545/gynae.2025.v9.i5b.1693

Abstract
Background: Twin gestation have been associated with numerous pregnancy related complications and perinatal morbidities. Although there have been many numerous international studies on this topic, very little has been studied regarding twin pregnancies in South India, which is why this study has been taken up.
Materials and Methods: a total of 150 pregnancies, irrespective of the gestational age and parity at the time of admission who presented to the OPD of Department of Obstetrics & Gynaecology or to the casualty during July 2024 to June 2025 were included in the study.
Results: Most of the patients belonged to 31-35 years of age group. Majority of the study participants were multigravidae, registered cases, had underwent c- section. Preterm labor was the most common maternal complication followed by anemia. Most of the neonates had low APGR score at 1st min. there were 5.5% intrauterine deaths and 6% neonatal deaths reported.
Conclusion: screening for maternal and fetal complications in twin pregnancies helps in better management, and prevention of the perinatal and maternal morbidity and adverse outcomes. This calls for implementation of health schemes and programs by the government to enhance obstetric care, neonatal care.

Keywords: Twins, perinatal outcome, maternal outcome, preterm, low birth weight

Introduction
Globally, there has been a rise in natural higher order multiple conceptions [1]. This can be attributed to the social shift of mindset of working women that has resulted in choosing postponement of pregnancy for growth in career and ambitions. As the result of this, the average maternal age of conception has increased which in turn has led to increase in use of treatment of infertility such as ovulation induction, in-vitro fertilization and intra-cytoplasmic sperm injections [2-4].
Twin gestation occur as a result of complex interaction between different factors such as maternal age of conceiving, parity, family history of multiple pregnancies, and others [5].
Multiple gestations are associated with numerous adverse perinatal and maternal outcomes. The most common maternal complications in twin gestation are pregnancy-induced hypertension, preeclampsia, ante- and postpartum bleeding, gestational diabetes, assisted and surgical delivery and maternal death [6]. Common fetal complications include preterm births, low birth weight, twin to twin transfusion syndrome, perinatal deaths, and admission to neonatal intensive care unit (NICU) [7-9]. All these lead to significant emotional, physical and financial burden on the new parents and children [10].
The rates of perinatal mortality among twin gestations could be as high as upto six times in comparison with singleton pregnancies [7].
Multiple gestations have been on a rise worldwide, however, there is scarcity of literature and research papers regarding twin gestation in southern part of India. Hence this study was taken up with an aim to assess the perinatal outcomes of twin and its co-twin and maternal morbidities.

Materials and Methodology
This prospective observational study was conducted in the Department of Obstetrics and

Gynaecology, SV Medical College, Tirupati. The study was conducted over a period of 1 year, i.e. from July 2024 to June 2025. All registered pregnant cases with twin gestation, irrespective of gestational age or parity, attending the OPD or casualty of the hospital presenting during the study period were included in the study. Singleton pregnancies or multiple pregnancies other than twins (such as triplet and quadruplet pregnancies) were excluded from the study. A total of 150 patients were included in the study after obtaining a written informed consent.

Demographic details, history, detailed general and obstetric examination was done for all study participants. History details such as maternal age, gestational age at delivery, parity, use of any ovulation induction medications, and family history of twin gestation were emphasized. Routine investigations such as complete blood picture, blood grouping and typing, liver function tests, renal function tests, blood glucose levels, bleeding time, clotting time, serum electrolytes and complete urine examination were done. Ultrasound examination of the abdomen and fetus, 12- lead electrocardiogram, 2D echocardiography was done.

Post-delivery, the APGAR score, birth weight and anthropometric measurements of the fetuses were taken.

Results

150 twin pregnancies were included in the study. Majority of the women (35%) were in the age group of 31-35 years. The mean age of study population was 28.7 years. 60% of the pregnancies were registered in the institution.

Table 1: Gestational age wise distribution

Gestational Age	Frequency	Percentage
< 24 weeks	3	2%
25 - 28 weeks	25	16.7%
29 - 36 weeks	105	70%
> 36 weeks	17	11.3%

Most of the pregnancies were in their 3rd trimester, i.e. between 29-36 weeks of gestational age (70%) at the time of presentation. 61% of the study population were multigravida while the rest 39% were primigravida.

Table 2: Maternal complications

Maternal complications	No. of cases
Premature Labor	73
Anemia	70
Gestational Hypertension	35
Premature Rupture of Membranes	29
IUD Of One Fetus	15
IUGR	14
Postpartum Hemorrhage	26
Placenta Previa	5
Gestational Diabetes Mellitus	9
Polyhydramnios	7
APH	3
No Complication	30

80% of the patients had single or multiple pregnancy related complications. Amongst the pregnancy related complications in present study, premature labor was the most common. There were no maternal deaths reported during the study period.

62% had undergone caesarean section while the rest 38% had vaginal deliveries. Most common indication of caesarean section was malpresentation of the 1st twin.

Table 3: Neonatal outcomes

Neonatal Outcomes (n=300)	Frequency	Percentage
APGAR score <7 at 1 min	205	68.3%
APGAR score >7 at 10 min	95	31.7%
Intrauterine death	11	5.5%
Neonatal death	12	6%

68.3% of the neonates had APGAR score <7 at 1st min. 14 fetues died in -utero and 20 neonates died after birth.

Table 4: Birth weight

Birth Weight	No. of cases (n=300)	percentage
<1 kg	15	5%
1-1.5 kg	40	13.3%
1.5 -2 kg	25	8.3%
2-2.5 kg	130	43.3%
>2.5 kg	90	30%

51.6% of the neonates had low birth weight (weight between 1.5 - 2.5 kg). 13.3% of the neonates had very low birth weight (weight between 1-1.5 kg) and 5% of the neonates had extremely low birth weight (weight <1 kg). 59% of the neonates required NICU admission.

Table 5: Maternal outcomes

Maternal outcomes	Frequency	Percentage
ICU admission	12	8%
Maternal death	0	0
Blood transfusion	15	10%
Hysterectomy	3	2%

Discussion

Multiple gestations previously were regarded as unfavourable owing to the poor perinatal outcomes, increased maternal morbidities and mortalities.

In present study a total of 150 twin gestation were studied and their outcomes were evaluated. Most of the patients belonged to 31-35 years of age group. Majority of them were multigravidae.

Premature labour was the most common maternal complication in present study. Similar observations were seen by Chowdhury *et al* [11].

The incidence of twins in this study was 1.3% which is comparable to studies done by Bangal *et al* [12] (1.49%) and Chowdhury *et al* [11].

Anemia was the second most common maternal complication in present study. Similar observations were seen in studies by Bangal *et al* [12], Chowdhury *et al* [11] and Brown *et al* [13]. The reason for anemia probably is because of increase in demand for hemoglobin, iron, Vitamin B12 and folate. It could also be because of increased hemorrhage during delivery.

62% of the patients underwent C-section in present study. However, the c- section rates were much lower in study done by Bangal *et al* [12] (33%). The most common indication for c-section was malpresentation of 1st twin. Increase in the number of C-sections might be attributed to obstetric complications such as malpresentations, premature rupture of membranes, cord prolapse, previous delivery via C-section, etc.

Low birth weight was the commonest perinatal outcome. Similar observations were seen in studies by Obiechina *et al* [15] and Beyene *et al* [15]. 59% of the neonates required NICU admission. However, Beyene *et al* [15] reported only 12% of neonates requiring NICU admission. This could be due to the facilities and advanced medical facilities available at study setting.

APGAR score was low in majority of the neonates. Ihab *et al* [16]

had observed a lower APGAR score of 1st twin when compared with second twin. In present study neonatal death rate was 6%. The neonatal death rate was relatively lower in study done by Beyene *et al* [15] (1%).

Conclusion

Twin pregnancy poses a major challenge to the concerned obstetricians. Early detection of complications and prompt management should be done in all twin pregnancies to minimize perinatal morbidities and mortalities.

Proper antenatal care, with sufficient rest and hygienic dietary supplementation, together with vigilant screening during intra-natal and post-natal for complications and tackling them, lowers maternal and fetal morbidity and mortality.

Women should be counseled regarding conception at the right age, so as to avoid the complications with assisted reproductive technology.

Acknowledgement: the authors would like to thank the entire staff of Department of Obstetrics for extending their valuable support to conduct this study.

Conflicts of Interest: Nil.

References

1. Monden C, Pison G, Smits J. Twin peaks: more twinning in humans than ever before. Hum Reprod. 2021;36(6):1666-1673. DOI: 10.1093/humrep/deab029
2. Toner JP, Coddington CC, Doody K, Van Voorhis B, Seifer DB, Ball GD, *et al*. Society for Assisted Reproductive Technology and assisted reproductive technology in the United States: a 2016 update. Fertil Steril. 2016;106(3):541-546. DOI: 10.1016/j.fertnstert.2016.05.026
3. Cook JL, Geran L, Rotermann M. Multiple births associated with assisted human reproduction in Canada. J Obstet Gynaecol Can. 2011;33(6):609-616. DOI: 10.1016/S1701-2163(16)34909-X
4. Berg CJ, Atrash HK, Koonin LM. Pregnancy-related mortality in the United States, 1987-1990. Obstet Gynecol. 1996;88(2):161-167.
5. Bortolus R, Parazzini F, Chatenoud L, Benzi G, Bianchi MM, Marini A. The epidemiology of multiple births. Hum Reprod Update. 1999;5(2):179-187. DOI: 10.1093/humupd/5.2.179
6. Cetrulo CL. The controversy of mode of delivery in twins: the intrapartum management of twin gestation (Part I). Semin Perinatol. 1986;10(1):39-43. PMID: 3764448
7. Santana DS, Silveira C, Costa ML, Souza RT, Surita FG, Souza JP, *et al*. Perinatal outcomes in twin pregnancies complicated by maternal morbidity: evidence from the WHO Multicountry Survey on Maternal and Newborn Health. BMC Pregnancy Childbirth. 2018;18(1):1-11.
8. Markus L. Maternal and perinatal outcome among multiple pregnancies delivering at Bugando Medical Centre and Sekou Toure Regional Hospital in Mwanza, Tanzania. [Thesis]. Tanzania; 2013.
9. Santana DS, Cecatti JG, Surita FG, Tedesco RP, Passini R Jr, Souza RT, *et al*. Maternal and perinatal outcomes and factors associated with twin pregnancies among preterm births: evidence from the Brazilian Multicenter Study on Preterm Birth (EMIP). Int J Gynaecol Obstet. 2020;149(2):184-191. DOI: 10.1002/ijgo.13107
10. Henderson J, Hockley C, Petrou S, Goldacre M, Davidson L. Economic implications of multiple births: inpatient hospital costs in the first 5 years of life. Arch Dis Child Fetal Neonatal Ed. 2004;89(6):F542-F545. DOI: 10.1136/adc.2003.043851
11. Chowdhury S, Hussain MA. Maternal complications in twin pregnancies. MMJ. 2011;20(1):83.
12. Bangal VB, Patel SM, Khairnar DN. Study of maternal and foetal outcome in twin gestation at tertiary care teaching hospital. Int J Biol Adv Res. 2012;3(10):758.
13. Luke B, Brown MB, Alexandre PK, *et al*. The cost of twin pregnancy: maternal and neonatal factors. Am J Obstet Gynecol. 2005;192:909-915.
14. Obiechina N, Okolie V, Eleje G, Okechukwu Z, Anemeje O. Twin versus singleton pregnancies: the incidence, pregnancy complications, and obstetric outcomes in a Nigerian tertiary hospital. Int J Womens Health. 2011;3:227-230. DOI: 10.2147/IJWH.S22059
15. Beyene M, Komicha MA, Hussien H, Abdulwahed A, Hassen TA, Roba KT. Perinatal outcome of twin pregnancies among mothers who gave birth in Adama Hospital Medical College, Central Ethiopia. PLoS One. 2022;17(9):e0275307. DOI: 10.1371/journal.pone.0275307
16. Usta I, Nassar A, Awwad J, *et al*. Comparison of the perinatal morbidity and mortality of the presenting twin and its co-twin. J Perinatol. 2002;22:391-396. DOI: 10.1038/sj.jp.7210752

How to Cite This Article
Yadav CM, Sagari AJK, Geethavani, Sreegouri SR. Study on evaluation of maternal and perinatal outcomes in twin gestations in a tertiary care hospital in south India. International Journal of Clinical Obstetrics and Gynaecology. 2025;9(5):92-94.