ORIGINAL RESEARCH PAPER
Volume - 14 | Issue - 09 | September - 2025 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A STUDY ON EVALUATION, MATERNAL AND FETAL OUTCOMES OF THROMBOCYTOPENIA IN PREGNANCY

Obstetrics & Gynaecology

Dr. Yedla Srujana* Postgraduate, Department of Obstetrics and Gynaecology, Alluri Sitarama Raju Academy of Medical Sciences, Eluru, West Godavari District, Andhra Pradesh 534005, India *Corresponding Author

Dr. P. Mary Prabandha Senior Resident, Department of Obstetrics and Gynaecology, Alluri Sitarama Raju Academy of Medical Sciences, Eluru, West Godavari District, Andhra Pradesh 534005, India

Dr. D. Murmu Professor, Department of Obstetrics and Gynaecology, Alluri Sitarama Raju Academy of Medical Sciences, Eluru, West Godavari District, Andhra Pradesh 534005, India

Dr. K. Vandana Professor and HOD, Department of Obstetrics and Gynaecology, Alluri Sitarama Raju Academy of Medical Sciences, Eluru, West Godavari District Andhra Pradesh 534005, India

Dr. K. Sushmitha Postgraduate, Department of Obstetrics and Gynaecology, Alluri Sitarama Raju Academy of Medical Sciences, Eluru, West Godavari District, Andhra Pradesh 534005, India

ABSTRACT

Introduction: Thrombocytopenia, defined as a platelet count below 150,000/µl, affects 7–10% of pregnancies and is the second most common hematological disorder after anemia. While a mild, physiological decrease in platelet count is typical during pregnancy, significant thrombocytopenia due to underlying conditions such as immune thrombocytopenia (ITP), preeclampsia, HELLP syndrome, or thrombotic microangiopathies (TMA) can pose serious risks to both mother and fetus.Accurate diagnosis, close monitoring, and individualized management are critical to optimizing maternal and neonatal outcomes. **Materials and Methods:** This is a prospective observational study carried out atAlluri Sitarama Raju Academy of Medical Sciences, Eluru, Andhra Pradesh over a period of 18 months.150 cases of pregnant women diagnosed with thrombocytopenia were taken into study. The objective of this study is to assess maternal outcomes associated with thrombocytopenia,to evaluate fetal outcomes related to thrombocytopenia and to identify and analyze the underlyingetiologies of thrombocytopenia in pregnancy. **Results:** The study analyzed maternal and perinatal outcomes in thrombocytopenic pregnancies. Gestational thrombocytopenia was the leading cause (38%), with HELLP syndrome and non-obstetric causes each accounting for 20%. Maternal morbidity was low, with 85.3% experiencing none; hemorrhage (3.0%), pulmonary edema (3.4%), and DIC (2.7%) were notable complications. Mortality occurred in 1.3% of cases. Perinatal outcomes were favorable in 84.7% of cases, while complications included fetal growth restriction (3.8%), birth asphyxia (3.4%), neonatal thrombocytopenia (3.4%), intraventricular hemorrhage (1.5%), intrauterine death (1.5%), and stillbirth (1.9%). **Conclusion:** This study emphasizes the varied demographic and clinical profiles of pregnant women with thrombocytopenia. Severe thrombocytopenia emerged as the most common type (40%), with gestational thrombocytopenia being the leading cause. Maternal morbidity was generally low, with most participants experiencing no complications. However, hemorrhage, pulmonary edema, sepsis, and acute renal failure occurred in a small percentage, and mortality was noted in 1.3% of cases. Perinatal outcomes were predominantly favorable, although instances of fetal growth restriction, birth asphyxia, and neonatal thrombocytopenia were observed.

KEYWORDS

INTRODUCTION

Thrombocytopenia, defined as a platelet count below 150,000/µl, is the second most common hematological disorder in pregnancy after anemia, affecting approximately 7–10% of pregnant women. A mild, physiological decrease in platelet count during pregnancy—especially in the third trimester—is common due to hemodilution, increased platelet consumption, and enhanced aggregation driven by elevated thromboxaneA2 levels. This gestational thrombocytopenia is usually benign, asymptomatic, and requires no specific treatment.

However, significant thrombocytopenia warrants careful evaluation as it may be associated with pathologicalconditions such as immune thrombocytopenia (ITP), preeclampsia, HELLP syndrome, thrombotic thrombocytopenic purpura (TTP), and infections. The International Working Group (IWG) defines ITP in pregnancy as a platelet count below 100 × 10^9/L, a condition observed in less than 1% of pregnancies.

Identifying the underlying etiology is critical for guiding treatment and ensuring maternal and fetal well-being. For instance, while gestational thrombocytopenia typically requires only monitoring, conditions like HELLP syndrome or TTP necessitate urgent intervention, often including delivery . Clinical monitoring throughout pregnancy and labor is essential, as thrombocytopenia can impact decisions regarding anesthesia and mode of delivery.

A platelet count of ≥50 × 10^9/L is considered adequate for vaginal delivery, while neuraxial anesthesia is generally safe if the count exceeds 80 × 10^9/L. Platelet transfusions are reserved for cases with active bleeding or extremely low counts. If gestational thrombocytopenia presents with counts below 70 × 10^9/L, secondary causes such as ITP should be investigated.

Neonates born to mothers with gestational thrombocytopenia usually do well, though those born to mothers with ITP may have transient thrombocytopenia, occasionally leading to serious complications such as intracranial hemorrhage. Therefore, pediatric evaluation is recommended in such cases.

AIMS & OBJECTIVES :

Aim

To investigate thrombocytopenia during pregnancy.

Objectives

1. To assess maternal outcomes associated with thrombocytopenia.
2. To evaluate fetal outcomes related to thrombocytopenia.
3. To identify and analyze the underlying etiologies of thrombocytopenia in pregnancy.

MATERIALS AND METHODS

- This is a prospective observational study carried out at Alluri Sitarama Raju Academy of Medical Sciences, Eluru, Andhra Pradeshover a period of 18 months from July 2023 to Jan 2025.150 cases of pregnant women diagnosed with thrombocytopenia were taken into study.
- The objective of this study is to assess maternal outcomes associated with thrombocytopenia, to evaluate fetal outcomes related to thrombocytopenia and to identify and analyze the underlying etiologies of thrombocytopenia in pregnancy.

Inclusion Criteria

- Antenatal Women admitted with platelet count below 100,000/ cu.mm
- Women consenting for the study

Exclusion Criteria

- 1st and 2nd trimester pregnant women
- Women with platelet count above 100,000/ cu.mm

RESULTS AND ANALYSIS

Table 1: Obstetric Causes of Thrombocytopenia

Thrombocytopenia	Number	%
Gestational	57	38.0
HELLP	30	20.0
Eclampsia	12	8.0
DIC(Abruptio Placentae)	18	12.0
AFLP	3	2.0
Non-Obstetric	30	20.0
Total	150	100

Table 2: Maternal Outcome

Maternal Outcome	Number	%
No Morbidity	128	85.3
Hemorrhage	5	3.0
Puerperal Sepsis	3	2.3
ARF	3	1.9
DIC	4	2.7
Pulmonary edema	5	3.4
Death	2	1.3

Table 3: Perinatal Outcome

Perinatal Outcome	Number	%
None	127	84.7
FGR	6	3.8
Birth Asphyxia	5	3.4
Neonatal Thrombocytopenia	5	3.4
ICH	2	1.5
IUD	2	1.5
Still Birth	3	1.9

Thrombocytopenia severity varied, with 40% having severe thrombocytopenia, 35.6% mild, and 24.4% moderate. The most common cause was gestational thrombocytopenia (38%), followed by HELLP syndrome and non-obstetric causes (20% each). DIC was noted in 12%, eclampsia in 8%, and AFLP in 2%.

Most participants (85.3%) experienced no maternal morbidity. Complications included pulmonary edema (3.4%), hemorrhage (3%), DIC (2.7%), puerperal sepsis and ARF (2% each), and death in 1.3% of cases.

Perinatal outcomes were generally positive, with 84.7% showing no adverse events. FGR occurred in 3.8%, birth asphyxia and neonatal thrombocytopenia in 3.4% each, ICH and IUD in 1.5% each, and stillbirth in 1.9%.

DISCUSSION

The majority of study participants were aged 21–25 years (46%), followed by those aged 26–29 (36%). Participants aged 18–20 made up 14%, while only 4% were in the 30–35 age group. Most women (46.7%) were between 33 and 36 weeks gestation, with 32% between 29 and 32 weeks, and 21.3% between 37 and 40 weeks.

In terms of parity, 53.3% were in their second or third pregnancy, 41.1% were primigravida, and 5.6% had three or more previous pregnancies. Regarding delivery method, 54.7% underwent lower segment cesarean section (LSCS), while 45.3% delivered vaginally.

Gestational thrombocytopenia was the most common cause (38%) of cases, followed by HELLP syndrome and non-obstetric causes (20% each), DIC (12%), eclampsia (8%), and AFLP (2%). Severe thrombocytopenia was the most frequent severity (40%), followed by mild (35.6%) and moderate (24.4%). Compared to other studies, this study observed a higher proportion of severe cases, indicating variability in thrombocytopenia severity across populations and emphasizing the need for context-specific management strategies.

Most participants (85.3%) experienced no morbidity. Hemorrhage and pulmonary edema each affected about 3% of participants, while puerperal sepsis and acute renal failure impacted around 2%. DIC was seen in 2.7% of cases, and the mortality rate was 1.3%, indicating a range of maternal outcomes.

In the present study, majority of cases (84.7%) experienced no adverse perinatal outcomes. Fetal growth restriction (FGR) was observed in 3.8% of cases. Both birth asphyxia and neonatal thrombocytopenia were present in 3.4% of participants. Intraventricular hemorrhage (ICH) and intrauterine death (IUD) each accounted for 1.5% of outcomes. Stillbirth was recorded in 1.9% of cases.

CONCLUSION

Most participants were young adults aged 21–25, with the majority presenting at 33–36 weeks of gestation. Over half were in their second or third pregnancy, and a slight majority delivered via lower segment cesarean section (LSCS). Severe thrombocytopenia was the most common form (40%), with gestational thrombocytopenia identified as the leading cause.

Maternal morbidity was low, with 85.3% of participants experiencing no complications. However, a small percentage developed issues such as hemorrhage, pulmonary edema, puerperal sepsis, and acute renal failure, while mortality was observed in 1.3% of cases. Perinatal outcomes were largely favorable, though some cases involved fetal growth restriction, birth asphyxia, or neonatal thrombocytopenia. The findings emphasize the need for timely diagnosis and management of thrombocytopenia in pregnancy to ensure better maternal and fetal outcomes.

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