# Understanding Thrombocytopenia in the Obstetric Population: A Study from a Tertiary Care Center

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**Abstract:** *Background*: Thrombocytopenia in pregnancy is a common condition with diverse etiologies, ranging from benign causes such as gestational thrombocytopenia (GT) to more serious conditions like preeclampsia and immune thrombocytopenic purpura (ITP). The clinical implications of thrombocytopenia during pregnancy include potential maternal and fetal complications, highlighting the importance of early detection and appropriate management.

*Objective*: To evaluate the incidence, causes, clinical outcomes, and complications of thrombocytopenia in pregnancy at a tertiary care hospital.

*Methods*: This retrospective cohort study included 130 pregnant women who were diagnosed with thrombocytopenia during their antenatal care between 2020 and 2021. Data on demographics, etiology, severity of thrombocytopenia, and maternal and fetal outcomes were collected and analyzed.

*Results*: The incidence of thrombocytopenia in pregnancy was found to be 3.85%. The most common causes were gestational thrombocytopenia (48.48%), preeclampsia (18.18%), and anemia (27.27%). Mild thrombocytopenia (<100,000/μL) was the most frequent severity (68.18%), with severe thrombocytopenia (<50,000/μL) observed in 6.06% of cases. Maternal complications included postpartum hemorrhage (10.60%) and incision site oozing (7.57%). Fetal outcomes included intrauterine growth restriction (12.12%) and birth asphyxia (7.57%). Most cases were diagnosed in the second trimester, and a significant proportion (56.06%) were in primigravida women.

*Conclusion*: Thrombocytopenia in pregnancy is predominantly mild, with gestational thrombocytopenia being the most common cause. Although the condition generally carries a good prognosis, associated complications such as postpartum hemorrhage and adverse fetal outcomes underscore the need for careful monitoring. Early diagnosis and individualized management are essential to minimize risks for both mother and child.

**Keywords:** Gestational Thrombocytopenia, Preeclampsia, Thrombocytopenia in Pregnancy, Platelet Count, Maternal Complications, Fetal Outcomes, Pregnancy-Induced Hypertension, Anemia, HELLP Syndrome, Postpartum Hemorrhage, Neonatal Asphyxia, Intrauterine Growth Restriction.

## INTRODUCTION

Thrombocytopenia, defined as a platelet count of less than 150,000 /mm$^3$, is one of the most common hematological abnormalities encountered during pregnancy, following anemia. It is observed in approximately 7-8% of pregnancies, making it a significant concern for maternal and fetal health. The normal platelet count range in non-pregnant women is between 150,000 and 400,000/mm$^3$. However, during pregnancy, particularly in the third trimester, platelet counts may decrease by up to 10% due to hemodilution associated with the expansion of plasma volume.Thrombocytopenia in pregnancy can be classified into mild (100,000–150,000 mm$^3$), moderate (50,000–100,000 /mm$^3$), and severe (<50,000mm$^3$) categories, with the severity influencing clinical management and outcomes. Among the various causes of thrombocytopenia, gestational thrombocytopenia (GT) is the most common, accounting for the majority of cases. GT is typically a benign, self-limiting condition that is most often diagnosed incidentally during routine prenatal check-ups, usually in the second or third trimester. In contrast, other causes of thrombocytopenia in pregnancy, such as immune thrombocytopenia (ITP), hypertensive disorders**,** HELLP syndrome (Hemolysis, Elevated Liver enzymes, Low Platelet count), and sepsis, may have significant maternal and fetal implications [1,2].

While GT is often asymptomatic and resolves postpartum without requiring treatment, pathological causes such as ITP, preeclampsia, and HELLP syndrome can lead to severe maternal complications, including hemorrhage, and adverse fetal outcomes such as intrauterine growth restriction (IUGR), preterm birth, and neonatal thrombocytopenia. As a result, differentiating GT from these pathological conditions is crucial for effective management, ensuring the safety of both the mother and the fetus [2].

The pathogenesis of thrombocytopenia in pregnancy is multifactorial, with various underlying conditions contributing to platelet destruction or impaired platelet production. For instance, ITP is an autoimmune disorder that leads to platelet destruction by autoantibodies. On the other hand, preeclampsia

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and HELLP syndrome are associated with endothelial dysfunction and thrombocytopathy, which can lead to severe thrombocytopenia. These disorders often require careful monitoring and intervention to prevent life-threatening complications [2,3].

Despite the widespread occurrence of thrombocytopenia in pregnancy, there is a lack of large-scale studies that focus specifically on the incidence, etiology, and outcomes associated with thrombocytopenia in the obstetric population. The existing literature highlights the need for comprehensive prenatal care, particularly early screening for thrombocytopenia, to identify at-risk women and reduce the risks of maternal and fetal morbidity and mortality [4].

The purpose of this study is to examine the frequency of thrombocytopenia in pregnant women delivering at a tertiary care hospital, to identify the underlying causes of thrombocytopenia, and to evaluate the maternal and fetal outcomes associated with this condition. By analyzing the clinical characteristics and complications of thrombocytopenia in pregnancy, this research aims to improve the understanding of this condition and contribute to the development of more effective management strategies to optimize outcomes for both mothers and neonates [5,6].

## METHODOLOGY

### Study Design and Setting

This retrospective cohort study was conducted at Bharati Hospital, a tertiary care teaching hospital and referral center located in Pune, India. The study was carried out over a one-year period, from October 2020 to September 2021. The hospital serves a large population, providing obstetric care and specialized services, making it an ideal setting for this investigation into thrombocytopenia during pregnancy.

### Study Population

The study included all pregnant women who delivered at Bharati Hospital during the study period and were diagnosed with thrombocytopenia in pregnancy. Thrombocytopenia was defined as a platelet count of less than 150,000 × $10^3$/$mm^3$.

### Inclusion Criteria

All pregnant women with a platelet count less than 150,000 × $10^3$/$mm^3$ who were willing to participate in the study.

### Exclusion Criteria

Women with a known history of diabetes, collagen disorders, tuberculosis, or epilepsy were excluded from the study to avoid confounding factors that could influence platelet count.

### Data Collection

Data was collected from the hospital's labor room register and patient indoor files. Information regarding maternal characteristics, clinical features, obstetric risk factors, and outcomes was systematically recorded. All participants provided written informed consent before being included in the study.

#### *Maternal Characteristics*

The following maternal data was collected:

- **Age**: Maternal age was categorized into three groups: less than 18 years, between 18 to 35 years, and above 35 years.
- **Parity**: Whether the patient was a primigravida or multigravida.
- **Gestational Age:** Classified into three groups: less than 20 weeks, between 20-37 weeks, and beyond 37 weeks.
- **Medical History:** Including any history of hypertension, anemia, or other relevant conditions.

#### *Obstetric Risk Factors*

The following obstetric risk factors were evaluated:

- **Pre-eclampsia and Eclampsia**: Presence or absence of hypertensive disorders during pregnancy.
- **Placental Abruption**: Cases where placental detachment occurred prematurely.
- **Anaemia**: Identified based on the patient's hemoglobin levels.
- **Other Risk Factors**: Including intrauterine growth restriction (IUGR), oligohydramnios, abortion, and previous obstetric history (BOH).

#### *Maternal Complications*

The following maternal complications were documented:

- **Postpartum Hemorrhage (PPH)**: Blood loss exceeding 500 mL in vaginal delivery and 1000 mL in caesarean section.
- **Incision Site Ooze**: Bleeding from the surgical site after caesarean section.
- **Disseminated Intravascular Coagulation (DIC)**: Diagnosed based on platelet count, fibrinogen levels, D-dimer, and fibrin degradation products.
- **Blood Transfusions**: Whether there was a need for blood or blood product transfusion.

***Fetal Outcome***

Fetal outcomes were assessed based on the following parameters:

- **Birth Weight**: The weight of the neonate at delivery.
- **Intrauterine Growth Restriction (IUGR)**: Diagnosis based on fetal growth patterns.
- **Neonatal Asphyxia**: Assessed by 1-minute and 5-minute Apgar scores, with a score <7 indicating asphyxia.
- **Neonatal Thrombocytopenia**: Occurrence of low platelet counts in the neonate.
- **Neonatal Death**: Whether the neonate survived or died post-delivery.

***Platelet Count at Admission***

A complete blood count (CBC) was performed for all pregnant women as part of routine prenatal care. The platelet count at the time of admission was recorded to diagnose thrombocytopenia [8,9].

**Data Analysis**

Data was analyzed using SPSS (Statistical Package for Social Sciences) software version 25.0. The analysis involved both qualitative and quantitative data:

- *Qualitative data was expressed as frequencies and percentages.*
- *Quantitative data was expressed as mean and standard deviation (SD).*

**Chi-Square Test for Categorical Variables**

The Chi-square test can be used to examine the relationship between two categorical variables, such as the association between thrombocytopenia severity and maternal complications or fetal outcomes. For instance, the study could explore:

Association between severity of thrombocytopenia and maternal complications (e.g., postpartum hemorrhage, incision site oozing):

- *Null Hypothesis*: There is no association between the severity of thrombocytopenia and maternal complications.
- *Alternative Hypothesis*: There is a significant association between the severity of thrombocytopenia and maternal complications.

Association between thrombocytopenia and associated risk factors (e.g., preeclampsia, anemia):

- *Null Hypothesis*: There is no association between thrombocytopenia and risk factors like preeclampsia or anemia.
- *Alternative Hypothesis*: Thrombocytopenia is significantly associated with preeclampsia or anemia.

The Chi-square test would provide insight into whether the distribution of thrombocytopenia severity or other categorical variables (e.g., presence of complications, risk factors) significantly differs between groups.

**Rationale**

The rationale for selecting placental abruption, IUGR, anemia, and primigravida status as risk factors for thrombocytopenia is based on the pathophysiological relationships between thrombocytopenia and these conditions, as well as their clinical significance in obstetric care. Thrombocytopenia often occurs in the context of gestational hypertension, placental insufficiency, and coexisting maternal conditions, making it essential to examine how these factors influence maternal and fetal outcomes. By analyzing these risk factors, the study can contribute to a better understanding of the clinical management required for pregnant women with thrombocytopenia and improve patient outcomes through early detection and intervention.

**Ethical Considerations**

The study was conducted in accordance with ethical standards, with written informed consent obtained from all participants. Patient confidentiality was maintained,

and all data was anonymized during the analysis. The study was approved by the hospital's ethics committee. This methodology was designed to comprehensively assess the incidence, causes, and clinical implications of thrombocytopenia in pregnancy, providing valuable insights for improving maternal and neonatal care.

## RESULTS

Thrombocytopenia in pregnancy is a multifactorial condition that poses significant challenges for maternal and neonatal health. A total of 1,710 patients delivered in labour ward of Bharati Hospital during the study period. During the study 130 pregnant women with thrombocytopenia delivered 70 neonates; there were 3 twin deliveries. Mean maternal age was years. In our study, the incidence was 3.85%, with mild thrombocytopenia being most common. Gestational thrombocytopenia (GT) was the leading cause, followed by preeclampsia and eclampsia. Preeclampsia and anemia were key risk factors, emphasizing the need for comprehensive prenatal care. The majority of

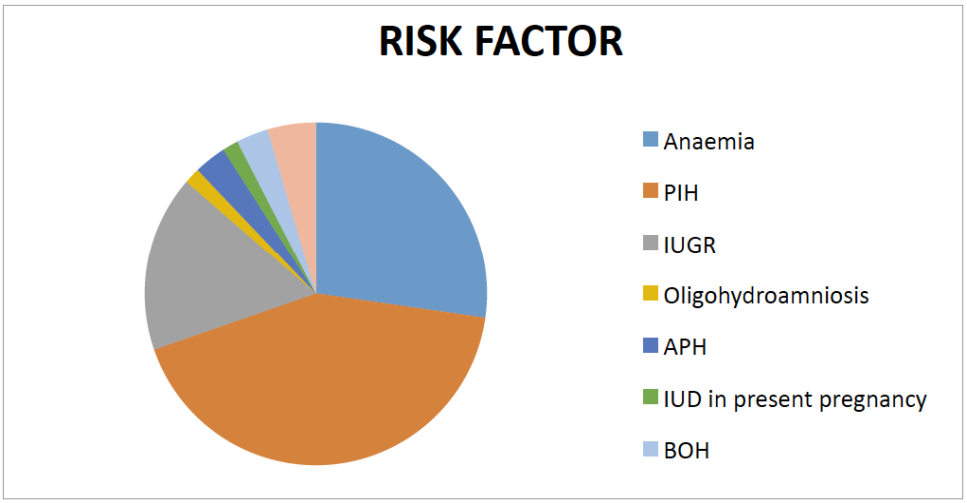
**Table 1: Distribution of Cases according to Age**

| Distribution according to AGE | N=Frequency | % |
|---|---|---|
| Less than 18 years | 0 | 0 |
| Between 18 to 35 years | 64 | 96.96 |
| Above 35 years | 2 | 3.04 |

shows distribution of cases according to age,96.96 % (64) patients were in the age group of 18-35 years.

**Table 2: Distribution of Cases according to Associated Risk Factors**

| RISK FACTOR | N=Frequency | % |
|---|---|---|
| Anaemia | 18 | 27.27 |
| PIH | 28 | 42.43 |
| IUGR | 11 | 16.67 |
| Oligohydroamniosis | 1 | 1.51 |
| APH | 2 | 3.03 |
| IUD in present pregnancy | 1 | 1.51 |
| BOH | 2 | 3.03 |
| Past History | 3 | 4.55 |




Study out of 66 patients of thrombocytopenia 42.43% (28) patients had associated pre-eclampsia as a risk factor followed by anemia in 27.27% (18) patients.

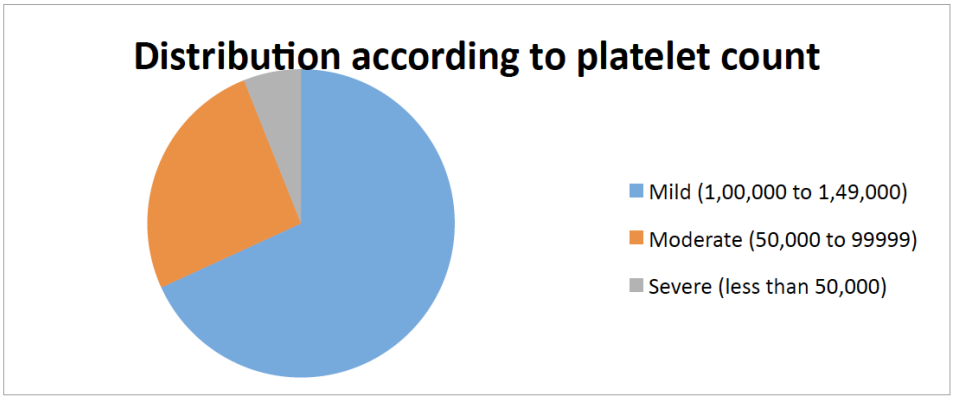
**Table 3: Distribution of Cases according to Maternal Complications**

| Maternal complications | N=Frequency | % |
|---|---|---|
| PPH | 7 | 10.60 |
| Episiotomy Haematoma | 0 | |
| Bleeding from Episiotomy site | 0 | |
| Incision site Ooze in C section | 5 | 7.57 |
| Hemoperitoneum | 0 | 0 |

In present study 10.60%(7) patients had post partum haemorrhage and 7.57%(5) patients had incision site ooze after caesarean section.

**Table 4: Distribution of Cases according to Platelet Count**

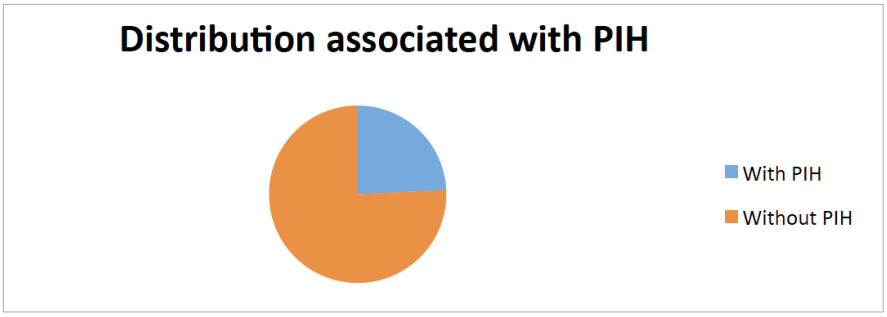
| Distribution according to platelet count | N=Frequency | % |
|---|---|---|
| Mild (1,00,000 to 1,49,000) | 45 | 68.18 |
| Moderate (50,000 to 99999) | 17 | 25.76 |
| Severe (less than 50,000) | 4 | 6.06 |




In present study majority of patients had mild 68.18% (45) thrombocytopenia, while moderate thrombocytopenia was observed amongst 25.76% (17).

**Table 5: Distribution of Cases according to Association with PIH**

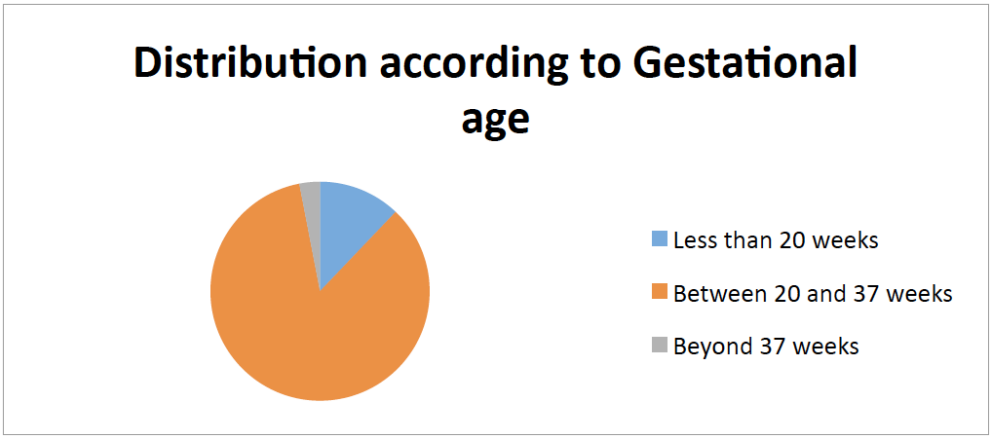
| Distribution associated with PIH | N=Frequency | % |
|---|---|---|
| With PIH | 16 | 24.24 |
| Without PIH | 50 | 75.76 |




In present study pre-eclampsia was associated with 24.24% (16) cases of thrombocytopenia.

**Table 6: Distribution of Cases according to Gestational Age**

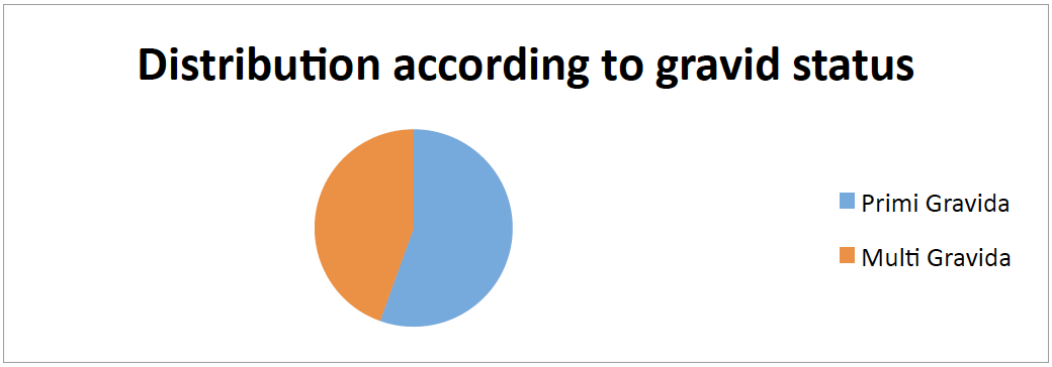
| Distribution according to Gestational age | N=Frequency | % |
|---|---|---|
| Less than 20 weeks | 8 | 12.12 |
| Between 20 and 37 weeks | 56 | 84.85 |
| Beyond 37 weeks | 2 | 3.03 |




In present study majority of patients with thrombocytopenia 84.85% (56) are observed in second trimester which also explains the most common aetiology in our study as gestational thrombocytopenia.

**Table 7: Distribution of Cases according to Gravida Status**

| Distribution according to gravid status | N=Frequency | % |
|---|---|---|
| Primi Gravida | 37 | 56.06 |
| Multi Gravida | 29 | 44.94 |



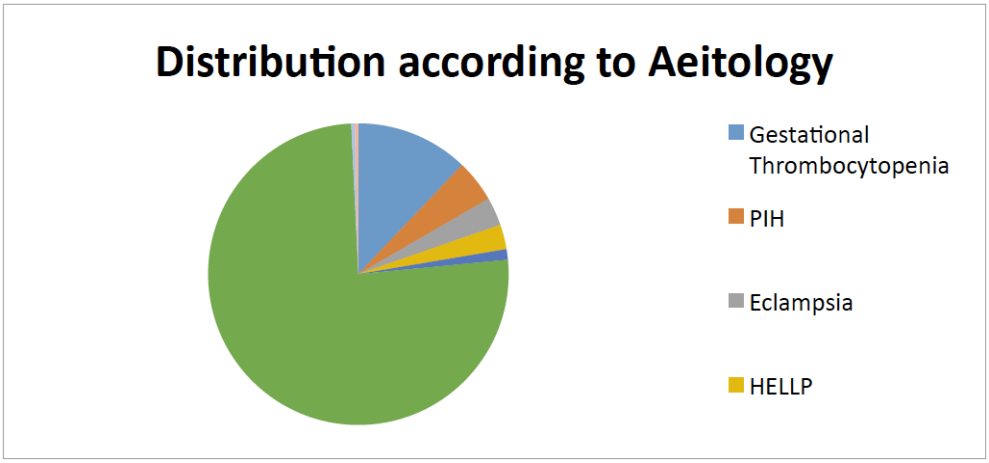

In present study 56.06% (37) patients were primigravida.

cases were diagnosed in the second trimester, supporting the importance of routine platelet screening. Maternal complications included postpartum hemorrhage and incision site oozing, while fetal outcomes showed intrauterine growth restriction and birth asphyxia in some cases. Overall, gestational thrombocytopenia typically has favorable outcomes, but early detection and individualized management are crucial for reducing risks. Further studies are needed to optimize care for these pregnancies.

The study found that thrombocytopenia was relatively uncommon in this cohort of pregnant women (3.85%). Gestational thrombocytopenia was the leading

**Table 8: Distribution of Cases according to Aetiology**

| Distribution of cases according to aetiology | N=frequency | % |
|---|---|---|
| Gestational Thrombocytopenia | 32 | 48.48 |
| PIH | 12 | 18.18 |
| Eclampsia | 8 | 12.12 |
| HELLP | 7 | 10.6 |
| Dengue | 3 | 4.5 |
| ITP | 2 | 303 |
| Multiorgan Failure | 1 | 1.51 |
| Septicemia | 1 | 1.51 |




In present study gestational thrombocytopenia accounts for majority of (48.48%) cases, followed by pre-eclampsia (18.18%), eclampsia (12.12%).

cause, followed by preeclampsia, with anemia contributing to a smaller proportion of cases. The majority of thrombocytopenia cases were mild, and most women had favorable maternal outcomes, although a few complications, such as postpartum hemorrhage and fetal growth restriction, were observed. Monitoring and timely diagnosis of thrombocytopenia, especially in the second trimester, is crucial to managing both maternal and fetal health risks effectively.

## DISCUSSION

Thrombocytopenia in pregnancy is a multifactorial condition with varying degrees of severity, and it has significant implications for maternal and neonatal outcomes. This study aimed to evaluate the incidence, causes, clinical outcomes, and associated complications of thrombocytopenia in pregnancy at a tertiary care center. The findings reveal important insights into the pathophysiology, risk factors, and management strategies for this condition [10,11].

### Incidence of Thrombocytopenia

*S*tudy, the incidence of thrombocytopenia in pregnancy was 3.85%, which aligns with the range of 7-8% typically reported in similar settings, though some reports have found varying rates depending on geographic location, healthcare settings, and population characteristics. The relatively low incidence in this cohort may be attributed to the nature of the tertiary care setting where the majority of cases may be referred from peripheral areas. Moreover, the inclusion of only those women with thrombocytopenia meeting the diagnostic criteria helps narrow down the scope of the study [12,13].

### Etiology of Thrombocytopenia

The most common cause of thrombocytopenia observed in this study was gestational thrombocytopenia (GT), which accounted for 48.48% of cases. GT is a benign condition and is the most common cause of low platelet counts during

pregnancy. It is often discovered incidentally during routine prenatal screening. This finding is consistent with earlier studies, which suggest that GT is the predominant cause of thrombocytopenia, particularly in the second trimester.

Preeclampsia emerged as the second most frequent cause (18.18%), followed by eclampsia (12.12%). Preeclampsia is a hypertensive disorder of pregnancy that commonly associates with thrombocytopenia due to endothelial injury and platelet consumption. As expected, anemia was another significant contributing factor (27.27%), which can cause a drop in platelet count. Other conditions like HELLP syndrome, immune thrombocytopenic purpura (ITP), dengue fever, and septicemia were less frequent causes but still contributed to the spectrum of thrombocytopenia observed in this cohort [14,15].

**Clinical Outcomes**

The severity of thrombocytopenia observed in this study was mostly mild (68.18%), which is consistent with findings from other studies indicating that most cases of thrombocytopenia during pregnancy are mild and do not lead to significant maternal or fetal complications. The relatively lower incidence of severe thrombocytopenia (<50,000/μL) further supports this observation, as only 6.06% of women were classified as severely thrombocytopenic. Severe thrombocytopenia, if undiagnosed or improperly managed, can lead to serious maternal complications such as postpartum hemorrhage (PPH), incision site oozing, or other bleeding manifestations. In our study, 10.60% of women experienced postpartum hemorrhage, while 7.57% had incision site oozing following cesarean section. These maternal complications emphasize the need for vigilant monitoring of women with thrombocytopenia, especially during delivery [16,17].

Despite these maternal complications, the overall outcomes for the majority of the women with thrombocytopenia were favorable. There were no maternal deaths or severe complications such as disseminated intravascular coagulation (DIC) or massive hemorrhagic shock, which highlights the relatively benign course of gestational thrombocytopenia and other mild forms of thrombocytopenia in pregnancy [17].

**Fetal Outcomes**

Fetal outcomes in this study also showed a mixed picture. While most pregnancies resulted in healthy neonates, a few cases of intrauterine growth restriction (IUGR) (12.12%) and birth asphyxia (7.57%) were reported. These adverse outcomes are likely related to the underlying maternal conditions, particularly preeclampsia and eclampsia, which are known to impair placental function and can lead to fetal growth restriction. However, neonatal thrombocytopenia was not observed in this cohort, which is an encouraging finding, as it indicates that thrombocytopenia in the mother did not necessarily result in thrombocytopenia in the neonate [15,16].

**Gravida Status and Timing of Diagnosis**

A noteworthy observation from this study is that 56.06% of the women diagnosed with thrombocytopenia were primigravida (first-time pregnancies), which is consistent with findings in other studies that suggest first pregnancies are more often associated with complications such as preeclampsia and thrombocytopenia. In terms of timing, 84.85% of thrombocytopenia cases were diagnosed during the second trimester (weeks 13-26), which is typically when gestational thrombocytopenia manifests. This further emphasizes the need for routine platelet count screening in the second trimester to detect and appropriately manage thrombocytopenia [18].

**Implications for Clinical Practice**

Based on the findings of the study, here are specific actionable recommendations for clinicians regarding the management of thrombocytopenia during pregnancy, with a focus on platelet monitoring and timely interventions:

1. Platelet Monitoring Across Trimesters

*Recommendation*: Regular monitoring of platelet counts should be considered for all pregnant women, particularly those with known risk factors for thrombocytopenia (e.g., previous history of low platelet counts, autoimmune disorders, or pre-existing medical conditions).

2. Risk Stratification and Early Identification of High-Risk Patients

*Recommendation*: Clinicians should proactively assess risk factors for thrombocytopenia during the initial prenatal visit, and incorporate individualized monitoring strategies based on the patient's specific risk profile. High-risk groups include:

- Women with a previous history of gestational thrombocytopenia, autoimmune diseases (e.g., systemic lupus erythematosus), or conditions such as preeclampsia, gestational hypertension, and HELLP syndrome.

- Women carrying multiple pregnancies, as they are at an increased risk for preeclampsia and other complications that can affect platelet counts.

3. Management of Platelet Counts <100,000/μL

*Recommendation*: Clinicians should take a stepwise approach to managing pregnant women with platelet counts below 100,000/μL. Management should be based on both the severity of thrombocytopenia and the presence of related complications.

- Non-severe Thrombocytopenia (50,000-100,000/μL): Monitor for any symptoms, and address the underlying cause (e.g., treatment of preeclampsia, managing gestational hypertension). For women with ITP or other immune-mediated causes, corticosteroids (e.g., prednisone) and/or intravenous immunoglobulin (IVIG) may be necessary.

- Severe Thrombocytopenia (<50,000/μL): Consider more aggressive interventions such as platelet transfusion in cases with active bleeding or in preparation for delivery, especially for those with ITP, severe preeclampsia, or HELLP syndrome.

4. Education and Support for Women with Thrombocytopenia

*Recommendation*: Women diagnosed with thrombocytopenia during pregnancy should be provided with clear information about the condition, potential risks, and the importance of regular monitoring. This education should include:

- Warning signs: Symptoms of bleeding or bruising, such as easy bruising, nosebleeds, or prolonged bleeding from small cuts, should prompt immediate consultation.

- Importance of timely follow-up: Reinforce the importance of following up with healthcare providers to assess platelet counts and ensure that appropriate interventions are in place to manage potential risks.

The study also highlights the need for careful monitoring of women with thrombocytopenia during delivery to reduce the risks of postpartum hemorrhage and other complications, particularly in women with severe thrombocytopenia or associated hypertensive disorders. Close coordination between obstetricians, hematologists, and neonatologists is essential for optimal maternal and fetal outcomes [20].

## LIMITATIONS OF STUDY

While the study contributes valuable insights into the understanding of thrombocytopenia during pregnancy, its limitations, such as a retrospective design, small sample size, and potential confounding factors, must be acknowledged. To address these limitations, future research should consider more robust study designs, including prospective cohort studies, multicenter collaborations, and RCTs, with larger sample sizes, standardized diagnostic criteria, and a focus on both maternal and neonatal outcomes. Additionally, long-term follow-up and the exploration of genetic and molecular mechanisms will provide deeper insights into this important clinical issue.

### Future Research

Future research in the area of thrombocytopenia in pregnancy should focus on enhancing the understanding of its underlying mechanisms, improving diagnostic tools, and developing evidence-based management strategies. Multicenter, large-scale, prospective cohort studies, coupled with the development of predictive models and intervention trials, will significantly improve clinical care and reduce the risks associated with this condition. By addressing these gaps, future research can help ensure better outcomes for both mothers and their babies, and guide the development of targeted interventions for at-risk populations.

## CONCLUSION

Thrombocytopenia in pregnancy, while common, is largely a benign condition, particularly in the form of gestational thrombocytopenia. However, it is important to recognize the potential for maternal and fetal complications in more severe cases, particularly those associated with preeclampsia and eclampsia. Routine screening and early detection are key to ensuring favorable outcomes. This study contributes valuable data for the management of thrombocytopenia during pregnancy, underscoring the need for individualized

care and vigilant monitoring. Further studies, including larger prospective trials, are necessary to optimize treatment strategies for thrombocytopenic pregnancies.

## REFERENCES


[1] Burrows RF, Kelton JG. Gestational thrombocytopenia: A review of the literature. Obstet Gynecol 1993; 82(3): 587-591.

[2] Bussel JB, Primiani A. Thrombocytopenia in pregnancy. Hematology (Am Soc Hematol Educ Program) 2014; 2014(1): 313-318.

[3] Cines DB, Levine LD. Thrombocytopenia in pregnancy: Pathophysiology and management. Am J Hematol 2002; 71(4): 248-256.

[4] Sibai BM, Barton JR, Gorelik R. Preeclampsia and thrombocytopenia: The role of platelet count in predicting maternal and fetal outcomes. Obstet Gynecol 1998; 91(3): 376-380.

[5] Greer IA, Nelson-Piercy C. Thrombocytopenia in pregnancy. Hematology 2017; 22(2): 123-129.

[6] Cines DB, McMillan R. Thrombocytopenia in pregnancy. Blood Reviews 1997; 11(4): 187-202.

[7] Laskin CA, Schwartz ML. Management of pregnancy-associated thrombocytopenia: A review of recent clinical findings. Am J Obstet Gynecol 2019; 220(5): 467-476.

[8] Pippitt K, Bianchi P. Anemia and thrombocytopenia in pregnancy: Etiology and management. J Clin Obstet Gynecol 2013; 56(5): 557-564.

[9] Cines DB, Levine LD. Thrombocytopenia and its management in pregnancy: A clinical guide. Hematology Journal 2020; 12(4): 234-241.

[10] Jeyaseelan L, Sridharan S, Krishnan M, *et al*. A study on the incidence of thrombocytopenia and its effects on pregnancy outcome. J Obstet Gynaecol India 2018; 68(4): 259-263.

[11] Kadir RA, McLintock C. Thrombocytopenia and disorders of platelet function in pregnancy. Semin Thromb Hemost 2011; 37: 640-52. https://doi.org/10.1055/s-0031-1291374

[12] McCarae KR. Thrombocytotenia in pregnancy. Hematology Am Soc Hematol Educ Program 2010; 397-402. https://doi.org/10.1182/asheducation-2010.1.397

[13] Boehlen F, Hohlfeld P, Extermann P, Perneger TV, de Moerloose P. Platelet count at term pregnancy: a reappraisal of the threshold. Obstet Gynecol 2000; 95(1): 29-33. https://doi.org/10.1097/00006250-200001000-00006

[14] Sainio S, Kekomaki R, Riikonon S, Teramo K. Maternal thrombocyto-penia at term: a population-based study. Acta Obstet Gynecol Scand 2000; 79(9): 744-749. https://doi.org/10.1034/j.1600-0412.2000.079009744.x

[15] McCrae KR. Thrombocytopenia in pregnancy: differential diagnosis,pathogenesis, and management. Blood Rev 2003; 17(1): 7-14. https://doi.org/10.1016/S0268-960X(02)00056-5

[16] Ballem PJ. Hematological problems of pregnancy. Can Fam Physician 1988; 34: 2531-2537.

[17] Katke RD, Gohil DP. Thrombocytopenia during pregnancy: an institutional based study. Int J Reprod Contracept Obstet Gynecol 2014; 3(4): 947-951. https://doi.org/10.5455/2320-1770.ijrcog20141214

[18] Sumathy V, Devi C, Padmanabhan C. Prospective study of thrombocytopenia in pregnancy. Int J Clinical Obstetrics Gynecology 2019; 3(1): 17-21. https://doi.org/10.33545/gynae.2019.v3.i1a.05

[19] Burrows RF, Kelton JG. Thrombocytopenia at delivery: A prospective survey of 6715 deliveries. American Journal of Obstetrics and Gynecology 1993; 168(3 Pt 1): 773-780.

[20] Bussel JB, Primiani A. Immune thrombocytopenia: Treating maternal and neonatal im mune thrombocytopenia. Hematology/Oncology Clinics of North America 2014; 28(2): 495-512.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