

## To Evaluate the Etiology and Outcome of Pregnancies Affected by Thrombocytopenia

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### Abstract:

**Background:** To investigate the aetiology, obstetric risk factors and outcomes of thrombocytopenia complicating pregnancy.

**Methods:** Study was conducted on 100 pregnant women who had thrombocytopenia from May 2022 to October 2022, in Government Rajaji Hospital, Madurai, Tamilnadu, India. Clinical data including history, physical examination and investigations and outcome of those women were evaluated.

**Results:** Of the hundred women studied, 40% had viral infection, 34% had Gestational thrombocytopenia, Preeclampsia and its complications like HELLP syndrome (haemolysis, elevated liver enzymes, and low platelets) accounted for 22% of cases whereas idiopathic thrombocytopenic purpura (ITP) accounted for 4% of cases. IUGR (Intrauterine growth restriction), placental abruption, preterm and Neonatal Intensive Care Unit admission were more commonly observed in cases with moderate to severe thrombocytopenia but not with mild thrombocytopenia.

**Conclusion:** The Commonest cause of thrombocytopenia in pregnancy is viral infections in our study as there was a viral fever outbreak during September and October, followed by gestational thrombocytopenia, preeclampsia and its complications like HELLP syndrome and the last one being ITP. Early detection and treatment of underlying disorder and proper obstetric management depending on the cause is the key factor in management.

**Keywords:** Thrombocytopenia, viral infections, Gestational thrombocytopenia, Preeclampsia, HELLP syndrome.

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### Introduction

Thrombocytopenia is second common hematologic abnormality during pregnancy occurring in 7-10% of cases. Thrombocytopenia is defined as a platelet count of less than 150,000/ $\mu$ L.

Platelet count of 100,000 to 150,000/ $\mu$ L, 50,000 to 100,000/ $\mu$ L and <50,000/ $\mu$ L are classified as mild, moderate and severe thrombocytopenia respectively. The present study was aimed at investigating

the etiology, risk factors, severity of thrombocytopenia, mode of delivery and fetomaternal outcomes of pregnancies

**Methods:** The study included 100 pregnant women with thrombocytopenia (platelet count <150,000/ $\mu$ L) identified by computerized haematology laboratory report at Government Rajaji Hospital, Madurai during May 2022 - October 2022. Clinical data, observations, lab reports,

severity of thrombocytopenia were evaluated. The following clinical characteristics were evaluated: maternal

age, parity, gestational age, past medical and the cause and severity of thrombocytopenia.

**Table 1: Distribution according to age**

Age	Prevalence (%)
20-25years	18
26-30years	36
31-35years	31
35-40years	15

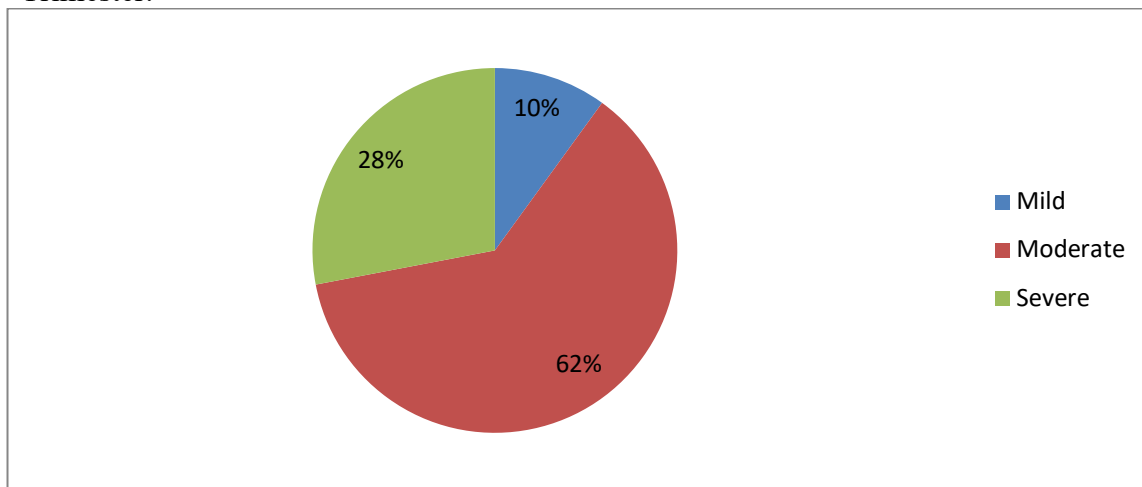
**Table 2: Distribution according to parity and gestational age:**

Parity	Prevalence (%)
Primigravida	53
2 <sup>nd</sup> gravida	40
Multigravida	7

**Table 3: Distribution according to parity and gestational age:**

Gestational Age	Prevalence (%)
I trimester	6
II trimester	30
III trimester	64

Out of 100 pregnant women 6% diagnosed in 1<sup>st</sup> trimester, 30% in 2<sup>nd</sup> Trimester and 64% in 3<sup>rd</sup> Trimester.



**Figure 1: According to the severity of thrombocytopenia**

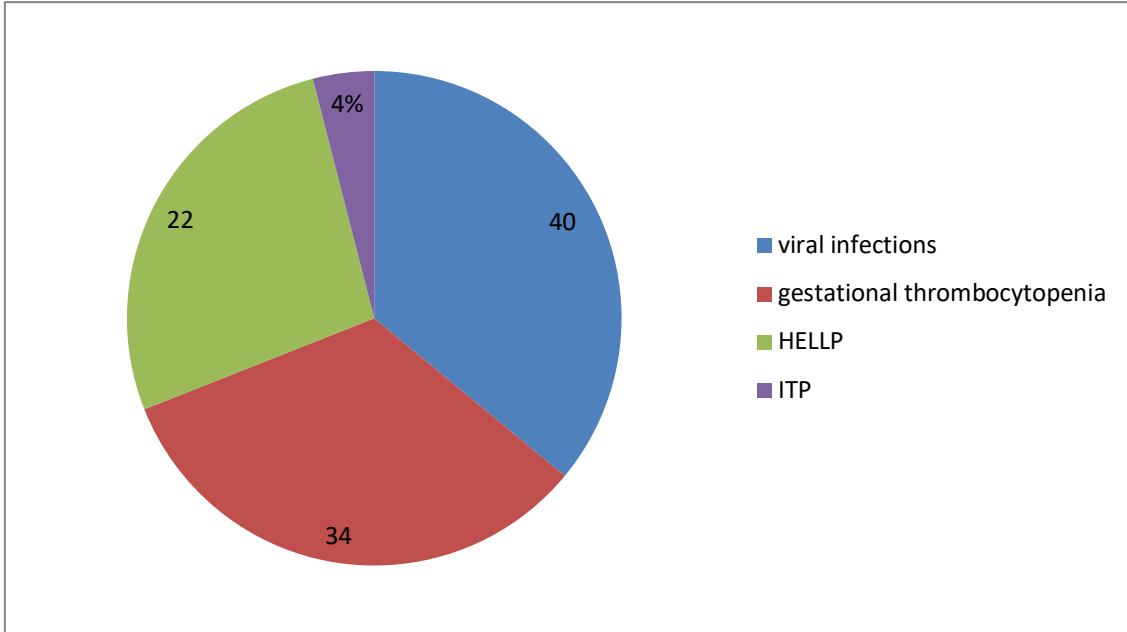
Mild thrombocytopenia was seen in 10%, moderate thrombocytopenia in 62% which was the highest and severe thrombocytopenia accounted 28%.

**Table 4: Other Associated Risk factors**

Risk Factors	Prevalence (%)
Anaemia	40
Jaundice	22
Hypothyroid	12
Oligohydramnios	12
Gestational DM	7
IUGR	3
Pulmonary edema	3
Abruption	1

Obstetric risk factors include anemia (36%) followed by jaundice (26%), hypothyroid (12%) and oligohydramnios (9%). Rest being gestational DM (7%), IUGR (3%), pulmonary edema (3%) and abruption (2%).

**Results:**



**Figure 2: Distribution of Patients according to Etiology**

Most common cause of moderate to severe thrombocytopenia was found to be viral infections 40%, gestational thrombocytopenia was 34%, preeclampsia, eclampsia and HELLP syndrome 22% followed by ITP which accounted for only 4 % of the cases

**Table 5: Induction and mode of delivery:**

Vaginal delivery	73%
Cesarean section	27%

Labor induction was done in 21% of cases. 73% had normal vaginal delivery and CS (Caesarean Section) was done in 27% of cases. The most common indication of Caesarean being Preeclampsia and its complications

**Table 6: Perinatal outcome**

Low birth weight	31%
Preterm	10%
Intrauterine Death	7%

Perinatal outcome of those who delivered during study period included low birth weight in 31%,Preterm 10% and IUD 7% .Most common cause of Preterm delivery being severe Preeclampsia and it’s complications including HELLP.

Though Viral Infections were more common causes for moderate to severe Thrombocytopenia in our study complications like intrauterine death, Preterm birth, Cesarean delivery were

more common in patients Preeclampsia and HELLP syndrome. Hence not only the degree but also the cause of thrombocytopenia decides Prognosis. Hence Identifying underlying pathology plays a vital role in management

**Discussion**

Thrombocytopenia, defined as blood platelet count below 1,50,000/micro litre is the second leading cause of blood disorders in pregnancy after anaemia. It

complicates 7 to 10% of all pregnancies. [1]

It is important to diagnose cause of thrombocytopenia so that medical and obstetric interventions and transfusions could be planned if necessary. Diagnosis and timely Management along with serial platelet monitoring and timely delivery according to cause detected plays an important role in decreasing Maternal and fetal mortality and morbidity Gestational Thrombocytopenia is usually mild and doesn't pose much risk to the mother and fetus [2].

Viral infections causing thrombocytopenia include dengue, infectious mononucleosis, human herpes virus 6, human immunodeficiency virus, parvovirus, varicella zoster virus of which dengue fever is the leading cause of thrombocytopenia. [3] Viral infections in pregnancy carries risk of haemorrhage for both mother and foetus. There is serious risk of premature birth and foetal death in case of infection close to term there is also risk of vertical transmission. Hence knowledge of its diagnosis and management is very important. Delaying delivery at least by one week, can provide immunity to the fetus and help in better outcome of mother.

Whereas in preeclampsia and its complications, delivery has to be planned depending on the severity of Blood pressure and other end organ functions and gestational age. This may warrant immediate delivery along with transfusion of blood products even when the foetus is preterm. Blood products transfusion may be necessary to prevent PPH and to treat disseminated intravascular coagulation which is dreaded complications associated with Preeclampsia and HELLP syndrome.

ITP is caused by platelet destruction in the reticuloendothelial system, due to platelet auto-antibodies against several platelet membrane glycoprotein complexes. Hence it is managed using steroids and if

necessary Immunoglobulins to reduce the destruction of platelets. Transfusion of platelets may be necessary when interventions are planned. [4,5,6,7]

Present study shows higher prevalence of maternal anemia, jaundice, oligohydramnios, preterm, IUGR and NICU admission among patients with moderate thrombocytopenia and the cause mainly being Preeclampsia and its complications.

### Conclusion

In our study we found out that the most common cause of thrombocytopenia is Viral infections (40%). It requires prompt management in antenatal period to avoid complications of mother and fetus. We also found out that the next common cause of thrombocytopenia in pregnancy is Gestational thrombocytopenia (34%). It is not associated with any adverse complications in both for the mother or baby. Next being Preeclampsia, eclampsia and HELLP syndrome which has contributed to majority of preterm birth and IUD. Only in 4 % of cases, ITP was found to be the cause for thrombocytopenia. In order to prevent complication, proper evaluation and appropriate management by multidisciplinary team is necessary

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