

## Original Research

### Assessment of cases of thrombocytopenia during pregnancy

Anisha

Associate Professor, Department of Obstetrics and Gynaecology, Mayo Institute of Medical Sciences, Barabanki, UP, India

#### ABSTRACT:

**Background:** Thrombocytopenia is a condition characterized by a low platelet count in the blood. The present study was conducted to assess thrombocytopenia during pregnancy. **Materials & Methods:** 86 antenatal women with platelet count < 1 lakh/cubic cc was enrolled. Blood pressure was assessed and complete blood counts (CBC) were recorded. The etiology of thrombocytopenia and Gravida was also recorded. **Results:** The age group 20-25 years comprised of 26, 25-30 years had 34, 30-35 years 20 and >35 years had 6 cases. The difference was non-significant ( $P > 0.05$ ). The mode of delivery was vaginal in 46 and cesarean in 40. Gravida was 1 in 35, and 2 in 51 patients. Blood pressure <140/90 mm Hg was seen in 45 and >140/90 mm Hg in 41 cases. The difference was non-significant ( $P > 0.05$ ). The etiology of thrombocytopenia was dengue in 8 and DIC in 12 cases, gestational thrombocytopenia in 16, pre-eclampsia in 24, eclampsia in 10, and acute fatty liver of pregnancy in 16 cases. **Conclusion:** Gestational thrombocytopenia is an established cause of thrombocytopenia, especially in third-trimester hypertensive pregnant women. For those women, close observation is recommended before, during, and after pregnancy.

**Keywords:** Anemia, Gestational thrombocytopenia, pregnancy

Received: 15 April, 2022

Accepted: 18 May, 2022

**Corresponding author:** Anisha, Associate Professor, Department of Obstetrics and Gynaecology, Mayo Institute of Medical Sciences, Barabanki, UP, India

**This article may be cited as:** Anisha. Assessment of cases of thrombocytopenia during pregnancy. J Adv Med Dent Scie Res 2022;10(6):145-148.

#### INTRODUCTION

Thrombocytopenia is a condition characterized by a low platelet count in the blood. Platelets are crucial for blood clotting, and a low count can lead to an increased risk of bleeding. Thrombocytopenia can occur for various reasons, and it's important to address it, especially during pregnancy, as it can have implications for both the mother and the baby.<sup>1</sup> The platelet count naturally drops during a typical pregnancy due to haemodilution, increased aggregation (higher levels of thromboxane A<sub>2</sub>), and more consumption in peripheral tissue. The physiological thrombocytopenia associated with pregnancy is mild and has no adverse effects on the mother or the fetus. However, significant thrombocytopenia caused by illnesses can harm both the mother and the fetus and necessitates close observation and discussion.<sup>2</sup>

The majority of cases of gestational thrombocytopenia (GT), a benign disease, have mild thrombocytopenia (platelet count of 130–150.000/vL). When a pregnant lady has platelet levels less than 50.000/vL, GT is

ruled out and alternative etiology needs to be investigated. The diagnosis of gestational thrombocytopenia is one of exclusion.<sup>3</sup>

It is estimated that 5–10% of pregnancies will result in preeclampsia, with the first pregnancy occurring more frequently than subsequent pregnancies, especially in women under 20.<sup>4</sup> The frequency and severity of thrombocytopenia increase in patients with HELLP syndrome or full-blown eclampsia with disseminated intravascular coagulation as the severity of preeclampsia increases.<sup>5</sup> In women who have never had thrombocytopenia outside of pregnancy, the condition is asymptomatic, often appears in the second half of pregnancy, and within the first two months after giving birth, the platelet count naturally returns to normal.<sup>6</sup> The present study was conducted to assess thrombocytopenia during pregnancy.

#### MATERIALS & METHODS

The present study consisted of 86 antenatal women with platelet count < 1 lakh/cubic cc. All patients gave their written consent to participate in the study.

Data such as name, age, etc. was recorded. A thorough clinical examination was performed. Blood pressure was assessed and complete blood counts (CBC) were recorded. The etiology of

thrombocytopenia and Gravida was also recorded. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

**RESULTS**

**Table I Distribution of patients**

Age group (years)	Number	P value
20-25	26	0.64
25-30	34	
30-35	20	
>35	6	

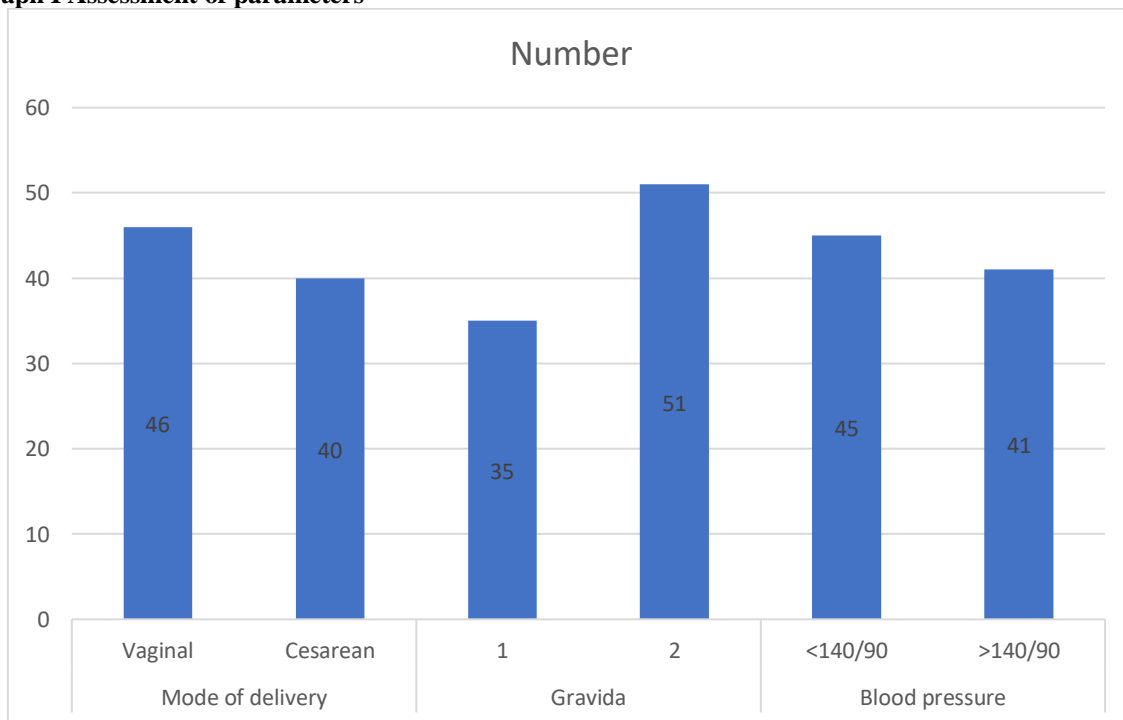
Table I shows that the age group 20-25 years comprised of 26, 25-30 years had 34, 30-35 years 20 and >35 years had 6 cases. The difference was non-significant (P> 0.05).

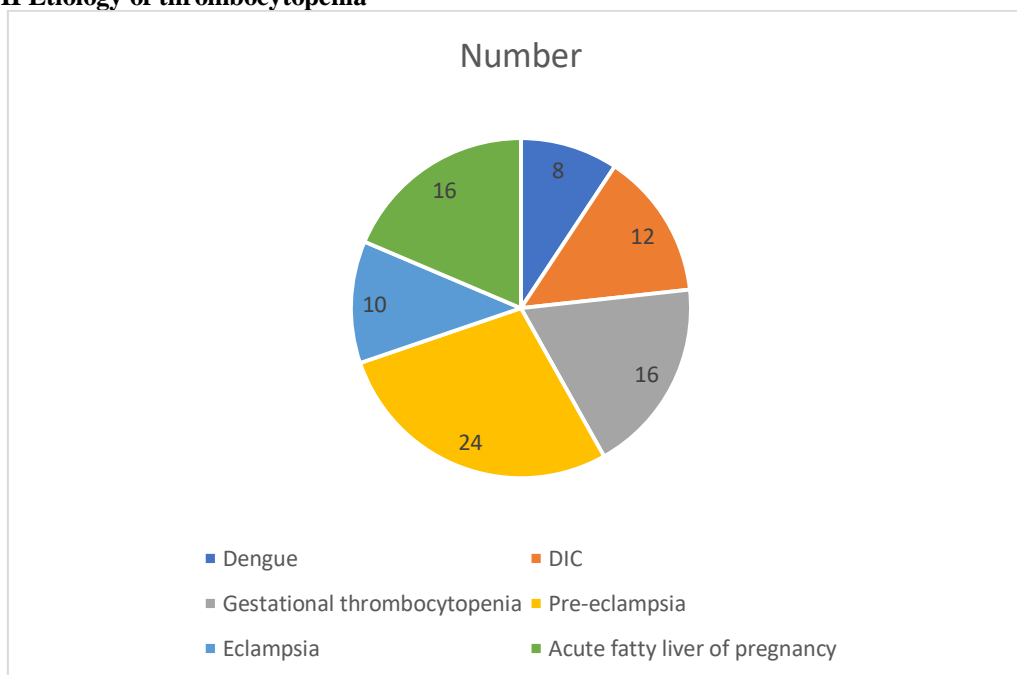
**Table II Assessment of parameters**

Parameters	Variables	Number	P value
Mode of delivery	Vaginal	46	0.86
	Cesarean	40	
Gravida	1	35	0.92
	2	51	
Blood pressure	<140/90	45	0.81
	>140/90	41	

Table II, graph I shows that the mode of delivery was vaginal in 46 and cesarean in 40. Gravida was 1 in 35, and 2 in 51 patients. Blood pressure <140/90 mm Hg was seen in 45 and >140/90 mm Hg in 41 cases. The difference was non-significant (P>0.05).

**Graph I Assessment of parameters**



**Graph II Etiology of thrombocytopenia**

Graph II show that the etiology of thrombocytopenia was dengue in 8 and DIC in 12 cases, gestational thrombocytopenia in 16, pre-eclampsia in 24, eclampsia in 10, and acute fatty liver of pregnancy in 16 cases.

## DISCUSSION

Thrombocytopenia is the second most frequent cause of blood disorders during pregnancy, after anemia. It complicates between 7 and 10 percent of pregnancies.<sup>7,8</sup> Thrombocytopenia associated with hypertension illnesses (preeclampsia, eclampsia, acute fatty liver of pregnancy) is the second most common cause of thrombocytopenia during pregnancy. Thrombocytopenia in this case indicates a serious case of hypertension.<sup>9</sup> Levels seldom fall below 20000/L. Preeclampsia is the cause of 20% of prenatal occurrences of thrombocytopenia. Thrombocytopenia can occasionally be the only early indication of this condition, occurring before any other test results.<sup>10</sup> The diagnosis can be challenging because the illness can present in 40% of patients without proteinuria or hypertension. About 70% of cases show symptoms prior to delivery. Conditions like preeclampsia and HELLP syndrome can be associated with thrombocytopenia.<sup>11</sup> Managing the underlying hypertensive disorder is crucial for the well-being of both the mother and the baby. Some infections, such as cytomegalovirus (CMV) or HIV, can lead to thrombocytopenia during pregnancy. Conditions affecting the bone marrow, such as aplastic anemia or leukemia, can lead to low platelet counts. These conditions may require more complex management.<sup>12</sup> The present study was conducted to assess thrombocytopenia during pregnancy.

We found that the age group 20-25 years comprised of 26, 25-30 years had 34, 30-35 years 20 and >35 years had 6 cases. Ajzenberg et al<sup>13</sup> conducted research on 50 women who had thrombocytopenia discovered during pregnancy (platelet count,  $150 \times 10^9/L$ ).

Biochemical signs for an autoimmune disease were found in 48% of the women, and chronic thrombocytopenia was seen in 55% of them. It was found that one case involved a familial thrombocytopenia. Of the 50 women who gave birth to newborns, 24 of the 63 had thrombocytopenic conditions either at delivery or in the first week of life. Neonatal thrombocytopenia can only be predicted in multiparous women if older siblings have already experienced neonatal thrombocytopenia or if a prenatal platelet lifespan test results in a profile resembling autoimmune thrombocytopenia (AITP).

We observed that the mode of delivery was vaginal in 46 and cesarean in 40. Gravida was 1 in 35, and 2 in 51 patients. Blood pressure <140/90 mm Hg was seen in 45 and >140/90 mm Hg in 41 cases. Mangann et al<sup>14</sup> stated that thrombocytopenia happens 8% of the time during the full pregnancy. The incidence of PIT decreases to 5.1% when obstetric or medical factors are considered, and PIT represents almost three-fourths of all cases. Thrombocytopenia is more common in those with mild and severe forms of preeclampsia (15–18%) compared to those with eclampsia (30%). Patients exhibit severe preeclampsia; 4-12% of patients fit the HELLP syndrome criteria. 4.1% of cases are immune-mediated thrombocytopenia; the rest cases are caused by phospholipid syndrome, medicines, and other causes.

We observed that the etiology of thrombocytopenia was dengue in 8 and DIC in 12 cases, gestational thrombocytopenia in 16, pre-eclampsia in 24, eclampsia in 10, and acute fatty liver of pregnancy in 16 cases. Burrows et al<sup>15</sup> estimated the risk of severe

thrombocytopenia at birth and minor or major morbidity for the infant of a pregnancy complicated by immune thrombocytopenic purpura. There were no deaths or intracranial hemorrhages in these studies and secondary morbidity occurred in 3.5 percent. An infant platelet counts of less than  $50 \times 10^9$  per liter was reported in 10.1 per cent and an infant platelet count of less than  $20 \times 10^9$  per liter occurred in 4.2 percent. Neither cordocentesis, scalp sample, nor umbilical cord sampling at birth altered the outcome of these infants and minor morbidity occurred equally in vaginal and cesarean births. Smaller case reports (less than 10 entrants) significantly over-estimated the prevalence of severe infant thrombocytopenia and secondary morbidity.

### CONCLUSION

Authors found that gestational thrombocytopenia is an established cause of thrombocytopenia, especially in third-trimester hypertensive pregnant women. For those women, close observation is recommended before, during, and after pregnancy.

### REFERENCES

- Burrows RF, Kelton JG. Thrombocytopenia at delivery: A prospective survey of 6175 deliveries. *Am J Obstet Gynecol.* 1990; 162:731–4.
- Burrows RF, Kelton JG. Fetal thrombocytopenia and its relation to maternal thrombocytopenia. *N Engl J Med.* 1993;329:1463.
- Kaplan C, Forestier F, Dreyfus M, et al. Maternal thrombocytopenia during pregnancy: Diagnosis and etiology. *Semin ThrombHemost.* 1995;21:85.
- Tsunoda T, Ohkuchi A, Izumi A, et al. Antithrombin III activity and platelet count are more likely to decrease in twin pregnancies than in singleton pregnancies. *Acta ObstetGynecol Scand.* 2002; 81:840.
- Letsky EA, Greaves M. Guidelines on the investigation and management of thrombocytopenia in pregnancy and neonatal alloimmune thrombocytopenia. *Br J Haematol.* 1996;95:21
- Sibai BM, Ramadan MK, Chari RS, et al. Pregnancies complicated by HELLP syndrome (hemolysis, elevated liver enzymes, and low platelets): Subsequent pregnancy outcome and long-term prognosis. *Am J Obstet Gynecol.* 1995;172:125.
- Ismail NA, Kampan N, Mahdy Z, Abdul Jamil MA, Mohd Razi ZR. Dengue in pregnancy. *Southeast Asian J Trop Med Public Health* 2006;37(4):681–683.
- Boehlen F, Hohlfeld P, Extermann P, et al. Platelet count at term pregnancy: a reappraisal of the threshold. *Obstet Gynecol.* 2000;95:29–33.
- George JN, Woolf SH, Raskob GE, et al. Idiopathic thrombocytopenic purpura: A practice guideline developed by explicit methods for the American society of haematology. *Blood.* 1996; 88:3–10.
- Jeffrey AL, Lance DM. Thrombocytopenia in pregnancy. *J Am Board Fam Pract.* 2002;15:290–7.
- Moise KJ. Autoimmune thrombocytopenic purpura in pregnancy. *Clin Obstet Gynecol.* 1991;34:51.
- Saftlas AF, Olson DR, Franks AL, et al. Epidemiology of preeclampsia and eclampsia in the United States, 1979–1986. *Am J Obstet Gynecol.* 1990;163:460.
- Ajzenberg N, Dreyfus M, Kaplan C, et al. Pregnancy-associated thrombocytopenia revisited: assessment and follow-up of 50 cases. *Blood.* 1998;92(12):4573–80.
- Magann EF, Martin JN Jr. Twelve steps to optimal management of HELLP syndrome. *Clin Obstet Gynecol.* 1999;42:532–50.
- Burrows RF, Kelton JG. Pregnancy in patients with idiopathic thrombocytopenic purpura: Assessing the risks for the infant at delivery. *ObstetGynecolSurv.* 1993;48:781.