

ORIGINAL ARTICLE

Assessment of thrombocytopenia during pregnancy

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ABSTRACT:

Background: Gestational thrombocytopenia (GT) is a benign condition with moderate thrombocytopenia (platelet count of 130-150.000/ μ L) in most of the cases. The present study was conducted to assess thrombocytopenia during pregnancy. **Materials & Methods:** 84 pregnant women were included in the study. Blood pressure monitoring was done and full blood counts were recorded. Gravida was also recorded. **Results:** Age group 20-25 years had 32, 25-30 years had 24, 30-35 years had 20 and >35 years had 8 cases. The difference was significant ($P < 0.05$). Gravida 1 was seen in 24, 2 in 22 and >2 in 38. Blood pressure (mm Hg) <140/90 was seen in 58 and >140/90 in 26. Platelet count <1.5 lacs/ cumm of blood was seen in 20 and >>1.5 lacs/cumm of blood was seen in 64. The difference was significant ($P < 0.05$). **Conclusion:** Gestational thrombocytopenia (GT) is recognized as a major cause of thrombocytopenia particularly in hypertensive pregnant women during the third trimester. Careful follow up during and after pregnancy for those women is recommended.

Key words: blood pressure, Gestational thrombocytopenia, pregnancy

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INTRODUCTION

Platelets are produced in the bone marrow and remain in blood for about 2 weeks before they are destroyed in the reticuloendothelial system.¹ The normal platelets count ranges between 150 and 450X $10^3/\mu$ L which is also the same as that is mostly recorded during the normal pregnancy. Thrombocytopenia, defined as blood platelet count below 150.000/ μ L is the second leading cause of blood disorders in pregnancy after anemia.² It complicates 7 to 10% of all pregnancies. There is a physiological decrease in platelet count during normal pregnancy due to haemodilution, increased consumption in peripheral tissue and increased aggregation (higher levels of thromboxane A₂). The physiological thrombocytopenia of pregnancy is mild and has no adverse effects for the mother and fetus. By contrast, a significant thrombocytopenia associated with medical conditions can have serious maternal-fetal consequences and requires specific monitoring and appropriate management.³ Gestational thrombocytopenia (GT) is a benign condition with moderate thrombocytopenia (platelet count of 130-150.000/ μ L) in most of the cases.⁴ Platelet values below 50.000/ μ L in a pregnant woman exclude GT and require the search of another

etiology. Gestational thrombocytopenia is a diagnosis of exclusion.

Preeclampsia prevalence is variable, the estimated incidence is 5–10 % of all pregnancies, with a higher incidence in the first pregnancy especially in women aged less than 20 years. The frequency and severity of thrombocytopenia increase with the severity of preeclampsia, and are greater in patients with the HELLP syndrome or in those who have a full-blown eclampsia with disseminated intravascular coagulation.⁵ The condition is asymptomatic, usually occurs in the second half of pregnancy, in the absence of a history of thrombocytopenia outside the pregnancy and the platelet count spontaneously returns to normal levels within the first two months postpartum.⁶ The present study was conducted to assess thrombocytopenia during pregnancy.

MATERIALS & METHODS

The present study comprised of 84 pregnant women. The consent was obtained from all enrolled patients. Data such as name, age etc. was recorded. A thorough clinical examination was performed in all. Blood pressure monitoring was done and full blood counts were recorded. 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	32	0.17
25-30	24	
30-35	20	
>35	8	

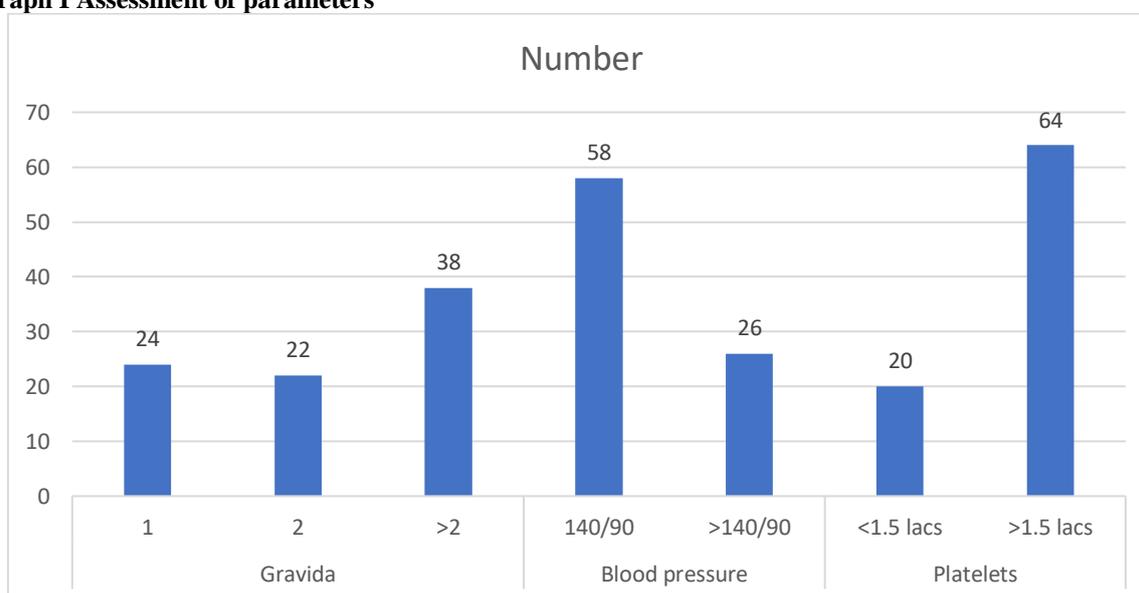
Table I shows that age group 20-25 years had 32, 25-30years had 24, 30-35years had 20 and >35years had 8 cases. The difference was significant ($P < 0.05$).

Table II Assessment of parameters

Parameters	Variables	Number	P value
Gravida	1	24	0.11
	2	22	
	>2	38	
Blood pressure	<140/90	58	0.02
	>140/90	26	
Platelets	<1.5 lacs	20	0.001
	>1.5 lacs	64	

Table II, graph I shows that gravida 1 was seen in 24, 2 in 22 and >2 in 38. Blood pressure (mm Hg) <140/90 was seen in 58 and >140/90 in 26. Platelet count <1.5 lacs/ cumm of blood was seen in 20 and >>1.5 lacs/cmm of blood was seen in 64. The difference was significant ($P < 0.05$).

Graph I Assessment of parameters



DISCUSSION

Thrombocytopenia associated with hypertensive disorders (preeclampsia, eclampsia, HELLP syndrome, acute fatty liver of pregnancy) is the second leading cause of thrombocytopenia in pregnancy.⁷ Thrombocytopenia occurring in this context is a sign of hypertensive disorder severity. Levels rarely fall below $20,000/\mu\text{L}$.⁸ Preeclampsia causes about 20% of cases of thrombocytopenia in pregnancy.⁹ Thrombocytopenia is sometimes the only initial sign of this condition, predating all the other laboratory changes. HELLP syndrome (hemolysis, elevated liver function tests, low platelets) is another pregnancy specific disorder and it complicates 10-20% of cases of severe preeclampsia.¹⁰ The syndrome can occur without proteinuria or hypertension (40% of cases) and the diagnosis may then be missed.¹¹ About 70% of the cases develop before delivery, the majority between the 27th and 37th gestational week, but in some women the signs suggestive of HELLP syndrome may occur postpartum (30% of cases). A platelet count of $<100,000/\mu\text{L}$ is one of the diagnostic criteria of HELLP syndrome. The pathophysiology is

similar to that of pre-eclampsia, with endothelial damage and release of tissue factors and coagulation activation.^{12,13} The present study was conducted to assess thrombocytopenia during pregnancy.

We found that age group 20-25 years had 32, 25-30 years had 24, 30-35 years had 20 and >35 years had 8 cases. Habas et al¹⁴ assessed the incidence of thrombocytopenia in hypertensive pregnant women during the third trimester of pregnancy. Five hundred forty-four pregnant women were included in this study. Five hundred and forty-four women were hypertensive according to WHO hypertension definition criteria. Sixty-seven women had only one reading of high blood pressure, while 39 women fulfilled HELLP syndrome criteria (hemolysis elevated liver enzymes low platelet). These 39 women were excluded from the study. Therefore, only 438 pregnant women remained eligible for the study. The mean age was (32.56 ± 1.5) , with their ages ranging between 18 and 49 years. Most of the included women were primigravida 179 (39%), gravid 2, para one were 72 (16.4%), and the rest were gravid 3 or more (42.6%). The blood pressure was 140-160/90-

110 mmHg in 365 women (83.4 %), and 73 women (16.7 %) had blood pressure readings more than 160/110 mmHg. Mean platelets count was (206.49 \pm 103 /l \pm 3.35), and ranged between (41.0 - 449.0 \pm 103 /l). Thrombocytopenia (less than 150 \times 10³ /l) was recorded in 103 women (23.5%). All pregnancy cases were delivered safely with no fetal complications.

We found that gravida 1 was seen in 24, 2 in 22 and >2 in 38. Blood pressure (mm Hg) <140/90 was seen in 58 and >140/90 in 26. Platelet count <1.5 lacs/cumm of blood was seen in 20 and >>1.5 lacs/cumm of blood was seen in 64. AJzenberg et al¹⁵ investigate 50 women of thrombocytopenia detected during pregnancy (platelet count, <150 \times 10⁹/L). They found biological features of an autoimmune disorder in 48% of the women, and chronic thrombocytopenia in 55%. A familial thrombocytopenia was evidenced in 1 case. These 50 women gave birth to 63 neonates, among whom 24 were thrombocytopenic, either at birth or during the first week of life. Neonatal thrombocytopenia could only be predicted in multiparous women, on the basis of previous neonatal thrombocytopenia in older siblings, and/or when maternal platelet life span study, performed before pregnancy, had evidenced an autoimmune thrombocytopenia (AITP)-like profile. These results suggest that, in case of pregnancy-associated thrombocytopenia, familial and immunological studies, combined with postdelivery iterative platelet counts, should be performed to properly characterize the thrombocytopenia. Moreover, the platelet count of the neonate should be carefully assessed at birth and during the following days, a platelet life span study should be performed after delivery in the mother, because these two parameters are likely to bring valuable information regarding the forthcoming pregnancies and the risk of neonatal thrombocytopenia.

Mangann et al¹⁶ reported that overall incidence of thrombocytopenia in pregnancy is 8 %. PIT incidence drops to 5.1 %, when obstetric or medical conditions are excluded, and almost three-fourths of all cases are due to PIT. Thrombocytopenia occurs more commonly in patients with eclampsia (30 %) than in patients with both mild and severe forms of preeclampsia (15–18 %). Patients have severe preeclampsia, with 4–12 % of them having criteria for HELLP syndrome, and immune-mediated thrombocytopenia is responsible for 4.1 % of cases, whereas the other causes such as phospholipid syndrome, drugs, etc. constitute the rest.

CONCLUSION

Authors found that gestational thrombocytopenia (GT) is recognized as a major cause of

thrombocytopenia particularly in hypertensive pregnant women during the third trimester. Careful follow up during and after pregnancy for those women is recommended.

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