

Hypertension in Pregnant Females Promotes Thrombocytopenia

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ABSTRACT

Objective: To determine how often pregnant hypertensive women get thrombocytopenia during the pregnancy.

Study Design: Retrospective study

Place and Duration: People university of Medical and Health Sciences for Women Nawabshah. January 2022 to December 2022.

Methods: Total 63 pregnant females were presented. All the presented females had pregnancy induced hypertension with age group 18-46 years. All cases included platelet estimate, and thrombocytopenia was diagnosed in individuals with a reported platelet count of less than 1,50,000/cumm. All data were analyzed with SPSS 24.0.

Results: Pregnant females had mean age 28.6 ± 4.35 years and had mean BMI 26.4 ± 3.29 kg/m². Frequency of primigravida was 27 (42.9%) and 36 (57.1%) cases were multi-gravida. Majority of the patients 55 (87.3%) had blood pressure 140-160/90-110 mmHg and 8 (12.7%) cases had Bp > 160/110 mmHg. Frequency of thrombocytopenia was found in 17 (26.98%) cases. Among 17 cases of thrombocytopenia mild PIH was found in 3 cases, moderate in 5 cases and 8 cases had severe PIH.

Conclusion: In particular, in third-trimester hypertensive pregnant women, gestational thrombocytopenia (GT) is recognized as a primary cause of thrombocytopenia. For those women, careful monitoring both during and after pregnancy is advised.

Keywords: Thrombocytopenia, Gestational hypertension, Pregnancy

INTRODUCTION

Thrombocytopenia is an associated phenomenon of Pregnancy induced hypertension (PIH).[1] Thrombocytopenia complicates 7-8% of all pregnancies. This increasing incidence of the disease is mainly attributed to automated complete blood count analyser which routinely includes platelet count. In pregnancy, most of this decline occurs in third trimester and is associated with a shift in the histogram of platelet count distribution. Thrombocytopenia is defined as subnormal number of platelets in the circulating blood. [2] In pregnancy, it results from a variety of causes ranging from benign disorders such as gestational thrombocytopenia to severe complicated life threatening conditions such as HELLP syndrome. Thrombocytopenia resulting from pregnancy induced hypertension is responsible for approximately 20% of all cases of thrombocytopenia during pregnancy. In pre eclampsia, usually the thrombocytopenia is mild to moderate but patients with eclampsia can develop severe thrombocytopenia and are more likely to have HELLP syndrome, which is a subset of pre eclampsia. Thrombocytopenia is a key and necessary component of this syndrome.[3]

In one study it was found that the main etiological factors of thrombocytopenia among cases with platelet count < 150000/ μ l were gestational thrombocytopenia (59.3%), preeclampsia (10.0%) and HELLP syndrome (12.0%), immune thrombocytopenia (11.0%). Lower limit of platelet count during otherwise normal pregnancy is considered to be 106-120x10⁹ /l [4,5]. Thrombocytopenia was found to be associated with higher rates of placental abruption, preterm deliveries, intrauterine growth restriction and stillbirth [6]. In Pakistan, prior studies show that most frequently reported etiology of low platelets in pregnancy is benign gestational one, which is seen in about 6% of the cases and constitute approximately 70-75% of all other causes .The platelet count is about 10% less than normal and this is mostly noticed on full blood counts done in the final trimester and usually becomes normal within 6 weeks after delivery. Immune mediated thrombocytopenia is documented in about 0.03% of pregnancies [7].

Although termination of pregnancy must be considered in the context of gestational age and other clinical and laboratory results in combination with PC levels, the classification of HDP is affected by whether mild thrombocytopenia is included as a sign of

maternal organ damage. Therefore, the discrepancy in PC cut-off values between the two major guidelines makes it difficult to compare studies based on these different guidelines. Actually, a sign of maternal organ damage, including thrombocytopenia (< 150 × 10⁹/L), was included in the criteria of classification of HDP in May 2018 in Japan and it increased the number of women who were diagnosed with pre-eclampsia [8].

MATERIALS AND METHODS

This retrospective study was conducted at People university of Medical and Health Sciences for Women Nawabshah and comprised of 63 pregnant females. Patients < 18 years of age, cases did not provide written consent and those had severe medical illness were excluded.

In order to rule out any known causes of a condition called like ITP, HELP syndrome, leukemia, which and/or lymphoproliferative diseases, blood pressure measurements were taken every two weeks, full blood counts were performed monthly, and peripheral blood films, renal function, and liver function tests were also performed. Before becoming pregnant, none of the women had a history of hypertension, and none had hepatitis B, C, or HIV infection. Using the SPSS Windows application version 24 for data organization and statistical analysis.

RESULTS

Pregnant females had mean age 28.6 ± 4.35 years and had mean BMI 26.4 ± 3.29 kg/m². Frequency of primigravida was 27 (42.9%) and 36 (57.1%) cases were multi-gravida.(table 1)

Table-1: Characteristics of the enrolled females

Variables	Frequency	Percentage
Mean age (years)	28.6±4.35	
Mean BMI (kg/m ²)	26.4±3.29	
Gravidity		
Primigravida	27	42.9
Multi-gravida	36	57.1

Majority of the patients 55 (87.3%) had blood pressure 140-160/90-110 mmHg and 8 (12.7%) cases had Bp > 160/110 mmHg.(table 2)

Table-2: Blood pressure of the enrolled females

Variables	Frequency (63)	Percentage
Blood Pressure		
140-160/90-110 mmHg	55	87.3
> 160/110 mmHg	8	12.7

Frequency of thrombocytopenia was found in 17 (26.98%) cases.(figure 1)

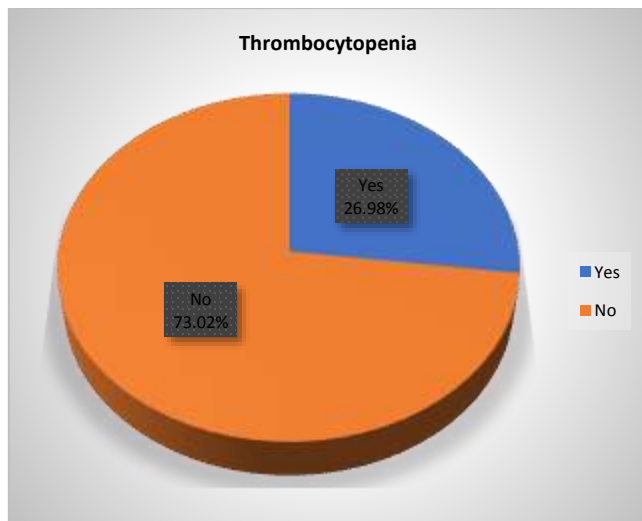


Figure-1: Association of thrombocytopenia

Among 17 cases of thrombocytopenia mild PIH was found in 3 cases, moderate in 5 cases and 8 cases had severe PIH.(table 3)

Table-3: Severity of PIH in patients of thrombocytopenia

Variables	Frequency (17)	Percentage
Pregnancy Induced Hypertension		
Mild	3	17.6
Moderate	5	29.4
Severe	8	47.1

DISCUSSION

Platelet counts below 150 103/l or the 2.5th percentile in people who are pregnant are considered to have thrombocytopenia. PIT is the term used to describe thrombocytopenia that develops in pregnant women who have no documented history of having the condition and who have no risk factors for it. Thrombocytopenia occurs in 7-8% of pregnancies, and in 75% of cases, there is no known underlying reason. Pregnancy-related thrombocytopenia can be brought on by hemodilution, increased placental platelet consumption, and enhanced platelet aggregation because of elevated thromboxane A2 levels.

In individuals with moderate thrombocytopenia, the rates of preterm birth and NICU hospitalization were comparable to those in patients with normal PC. In contrast, severe thrombocytopenia—a condition unrelated to thrombocytopenia—was a risk factor for the occurrence of maternal organ injury. Although patients with severe thrombocytopenia had greater odds of premature birth and NICU hospitalization than patients with normal PC, the results may have been skewed since severe thrombocytopenia is a sign that a pregnancy has been terminated [9].

Patients with thrombocytopenia are treated as having severe pre-eclampsia even when their blood pressure is less than 160/110 mmHg and there are no other symptoms of maternal organ damage [9, 10]. Blood coagulation problems, such as thrombocytopenia, are a marker of maternal organ damage. Using PC levels 150 109/L as a cut-off value for a symptom of maternal organ damage may increase needless hospitalization and

iatrogenic premature birth, especially after 34 GW, if the majority of instances of mild thrombocytopenia are not connected with poorer mother and newborn outcomes.

The underlying cause of thrombocytopenia in hypertensive pregnant woman is unknown. Burrows et al. [11] proposed that, in addition to an increased vascular tone during pregnancy, inducing platelet destruction, coagulation defects also occur. Some hypertensive pregnant women have an increased platelet-related IgG serum level; however, the increase in immunoglobulin is not specific and does not necessarily indicate an immunologic-mediated thrombocytopenia [12].

During the final trimester of the trial, all of the women had hypertension. Only around 26.98% of the sample of women had thrombocyte counts below 150 thrombocytes per liter. Although Jeffrey et al. [13] stated that thrombocytopenia can be a sign of got worse hypertensive disease in expecting women, in the current study, that was no deteriorating of the hypertension regulate or occurrence of other high blood pressure complications—for a mothers and the babies; additionally, we have not lost any baby in those women, additionally in women who had the platelets count as low as 41 103/l. Ajzenberg et al.'s previous study [14] found that thrombocytopenia seen during pregnancy did not go away after birth in 26 of 47 instances, which may mean that 55% of them genuinely had thrombocytopenia before to pregnancy rather than as a result of PIT. Before or during the postpartum period, none of the pregnant participants in this research had thrombocytopenia.

Between the severity of pregnancy-induced hypertension and thrombocytopenia, a statistically significant correlation has been found. Due to the improved fetal outcome and fetal survival, a greater rate of cesarean sections was seen with longer gestational times. The likelihood of maternal morbidity owing to abruption of the placenta, DIC, renal failure, CVT, eclampsia, and pulmonary oedema increases in instances with severe thrombocytopenia but is not statistically significantly associated with the prognosis of the mother. Due to uncontrolled postpartum hemorrhage, eclampsia, and abrupt placenta leading to DIC, there were 3 occurrences of maternal fatality. The gestational age at birth was mostly responsible for the perinatal outcome.[15]

CONCLUSION

In particular, in third-trimester hypertensive pregnant women, gestational thrombocytopenia (GT) is recognized as a primary cause of thrombocytopenia. For those women, careful monitoring both during and after pregnancy is advised.

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