

A CLINICAL STUDY TO ASSESS THE CLINICAL PRESENTATION AND OUTCOME IN PREGNANT WOMEN WITH THROMBOCYTOPENIA

Obstetrics & Gynaecology

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ABSTRACT

Introduction: Gestational thrombocytopenia is defined as platelet count less than 1,50,000/ μ l and forms the second most common cause of hematological disorders in pregnancy. The women with thrombocytopenia in pregnancy need to be carefully evaluated and the causes determined. **Methodology:** It is a hospital based prospective observational study conducted over a period of 6 months. All pregnant women attending OPD at the department of obstetrics and gynecology, SMS Medical College, Jaipur for antenatal checkup were included for the study and blood sample was taken. **Result:** The 145 (incidence-36.25%) pregnant women with thrombocytopenia attending the antenatal clinic were included in the study. The most common cause of thrombocytopenia in pregnancy was gestational thrombocytopenia seen in 75 (51.72%) women, followed by hypertensive disorders in 46 (31.72%) women. The coagulopathy was seen in 12 (8.28%) women, hepatic disease in 6 (4.14%) women. 5(3.45%) women had dengue IgM positive and 1 woman was diagnosed with ITP. **Conclusion:** The gestational thrombocytopenia is the most common benign cause of thrombocytopenia in pregnancy. The women with thrombocytopenia require careful monitoring to improve the fetomaternal outcome.

KEYWORDS

Thrombocytopenia, Gestational Thrombocytopenia, Pre Eclampsia, Coagulopathy.

INTRODUCTION

ACOG defines gestational thrombocytopenia as platelet count $<1,50,000/\mu$ l. It is the second most common hematological disorder in pregnancy closely followed by anaemia.^[1]

The pathogenesis of thrombocytopenia in pregnancy remains unclear, but could be attributed to lower production of platelet and increased turn over during pregnancy which is related to hemodilution.^[2] The gestational thrombocytopenia accounts for 4.4% to 11.6% of pregnancies, accounting for almost 75% of all occurrences of thrombocytopenia in pregnancy, pre-eclampsia with severe features/HELLP syndrome 22%, immune thrombocytopenic purpura (ITP) accounted for 11%, whereas other causes accounted for 8% (includes antiphospholipid syndrome, disseminated intravascular coagulation, dilutional thrombocytopenia, myeloproliferative neoplasm, and nutritional deficiencies)^[3-5].

It is critical to assess thrombocytopenia to rule out systemic causes which can result in increased fetomaternal morbidity and mortality.

Pregnant women with thrombocytopenia are also at risk of recurrence and the early diagnosis of the disease helps to reduce its complications. The present study focuses on assessment and accurate diagnosis and management of women which is vital for fetomaternal well being to correctly diagnosis the cause of thrombocytopenia and exclude the other underlying factors.

Methodology

It is a hospital based prospective observational study over a period of 6 months from July, 2023 to January, 2024. All pregnant women who attended OPD at the department of obstetrics and gynecology, at SMS medical college, Jaipur for antenatal checkup were included for the study and blood samples were withdrawn. Platelet count was performed using manual method and automated hematology method. The study included pregnant women with platelet count less than 1,50,000/ μ l and who gave a written informed consent. The women with any history of medical and thromboembolic disorders were excluded from the study.

All pregnant women were screened carefully and 145 women with thrombocytopenia on complete hemogram were selected.

The detailed history was taken and all patients were carefully examined. The details were entered in the prefilled proforma.

All women were subjected to blood test for hemoglobin, TLC, DLC, bleeding time, clotting time, RFT, LFT, HBsAg and HIV. The detailed history of symptomatology was taken and women with history of fever were subjected to test for Dengue IgM. In case of signs and symptoms of coagulopathy, coagulation profile (PT, APTT, FDP and fibrinogen) were done.

A close follow up was done for each patient and changes in platelet count and presenting symptomatology was noted in each. The fetomaternal outcomes were noted in terms of mode of delivery, any maternal and fetal complications.

Procedure

The blood sample was withdrawn using the dry sterile, disposable syringe and needle from the antecubital vein. 10ml of samples were taken into the properly labeled EDTA and plain vials. Laboratory analysis was performed for all samples within 4 hours of collection using manual method and automated hematology method.

All the data was entered in MS Excel and analysed using appropriate statistical tools.

RESULTS

The thrombocytopenia in pregnancy is a common complication with profound impact on fetomaternal outcomes. Out of 400 pregnant women who attended antenatal clinic, 145 women were diagnosed with thrombocytopenia on hemogram. The incidence in our study was 36.25%.

The mean age of women included in the study was 23.87 ± 3.54 years. The most women, 34.49% were in the group with gestational age of 28-32 weeks, followed by 44.83% in 33-36 weeks gestational age and the least, 20.68% women were from 37-40 weeks of gestational age.

TABLE 1: Severity of thrombocytopenia.

SEVERITY OF THROMBOCYTOPENIA	NUMBER OF WOMEN	NUMBER OF WOMEN WITH COMPLICATIONS	TRANSFUSION HISTORY
MILD (1,00,00- 1, 50,000)	60	11	6
MODERATE (50,000-1,00,000)	39	12	12

SEVERE (<50,000)	46	32	40
TOTAL	145	55	58

60 women had mild thrombocytopenia, 39 had moderate thrombocytopenia and 46 had severe thrombocytopenia. Complications were seen in 11 women with mild thrombocytopenia and 6 received transfusion, in 39 women with moderate thrombocytopenia, 12 had complications and 12 required transfusions and 46 women had severe thrombocytopenia of which 32 developed complications and 40 received transfusions. Out of 46 women with severe thrombocytopenia, the complications were in form of , 4 women with abruption placentae, post partum hemorrhage in 10 women, puerperal sepsis seen in 2 women, acute renal failure in 2 women, disseminated intravascular coagulopathy in 4 women, pulmonary edema in 2 women and vaginal hematoma in 2 women and muscle hematoma in 1 women.

The most common cause of thrombocytopenia in pregnancy was gestational thrombocytopenia seen in 75 (51.72%) women, followed by hypertensive disorders in 46 (31.72%) women. The coagulopathy was seen in 12 (8.28%) women, hepatic disease in 6 (4.14%) women. 5(3.45%) women had dengue IgM positive and 1 woman was diagnosed with ITP.

Table 2: Causes Of Thrombocytopenia In Pregnancy

CAUSES	NUMBER OF CASES	MILD	MODERATE	SEVERE
GESTATIONAL THROMBOCYTOPENIA	75 (51.72%)	50	20	5
HYPERTENSIVE DISORDER	46 (31.72%)	6	17	23
COAGULOPATHY	12 (8.28%)	2	1	9
HEPATIC DISEASE	6 (4.14%)	1	1	4
DENGUE	5 (3.45%)	1	0	4
ITP	1 (0.69%)	0	0	1
	145	60	39	46

The lower segment caesarean section was done for 67 (46.21%) women for obstetrical indications. and 78(53.79%) women had normal vaginal delivery.

90(62.07%) women had no complications. 55 women had varied complications including abruption placentae was seen in 10 (6.09%) women, postpartum hemorrhage in 21 (14.48%) women, puerperal sepsis in 5 (3.45%), acute renal failure in 4 (2.76%), disseminated intravascular coagulopathy in 7 (4.83%), pulmonary oedema in 3 (2.07%), hematoma formation was in 5 women with 3 (2.07%) having vaginal wall hematoma following a vaginal delivery and 2 (1.38%) had muscle hematoma.

Table 2: The Fetomaternal Outcomes And Complications In Pregnancy With Thrombocytopenia.

MATERNAL OUTCOMES	NUMBER OF CASES	MILD	MODERATE	SEVERE
CASREAN SECTION	67 (46.21%)	38	26	34
NORMAL VAGINAL DELIVERY	78 (53.79%)	22	13	31
	145	60	39	46
MATERNAL COMPLICATIONS				
NO MORBIDITY	90 (62.07%)	49	27	14
ABRUPTIO PLACENTAE	10 (6.90%)	3	3	4
PPH	21 (14.48%)	3	3	15
PUERPERAL SEPSIS	5 (3.45%)	2	1	2
ACUTE RENAL FAILURE	4 (2.76%)	1	1	2
DISSEMINATED INTRAVASCULAR COAGULOPATHY	7 (4.83%)	2	1	4
PULMONARY EDEMA	3 (2.07%)	0	1	2
HEMATOMA FORMATION		0	1	2
Vaginal hematoma	3 (2.07%)	0	1	1
Muscle hematoma	2 (1.38%)			
TOTAL	145	60	39	46
FETAL OUTCOMES				
TERM	85 (58.62%)	44	20	21

PRE TERM	60 (41.38%)	16	19	25
TOTAL	145	60	39	46
FETAL COMPLICATIONS				
NO MORBIDITY	96 (66.21%)	48	26	22
FETAL GROWTH RESTRICTION	18 (12.41%)	5	5	8
NICU ADMISSION	26 (17.93%)	6	7	13
INTRAUTERINE DEATH	4 (2.76%)	1	1	2
STILL BIRTH	1 (0.69%)	0	0	1
TOTAL	145	60	39	46

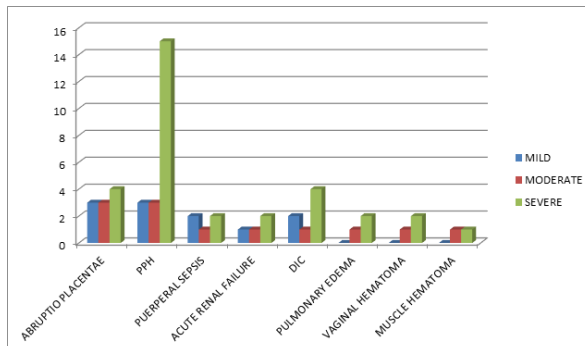


Figure 1: Bar Chart Showing Distribution Of Maternal Complication According To Severity Of Thrombocytopenia.

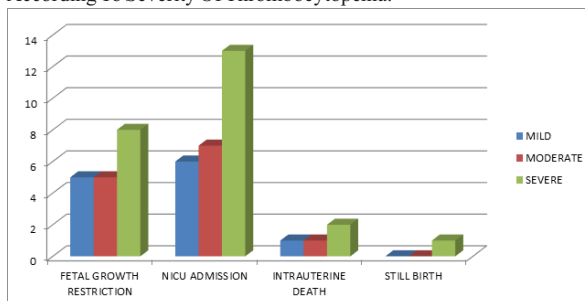


Figure 2: Bar Chart Showing Distribution Of Fetal Complications According To Severity Of Thrombocytopenia.

Most of the fetus 85(58.62%) were delivered at term. However, 60(41.38%) had a pre term delivery. There were no morbidity in 96(66.21%) fetus. Rest 49 fetus had complications in form of fetal growth restriction in 18 (12.41%). NICU admission in 26 in fetus with 13 in severe thrombocytopenia group.

The mortality was seen in 5 fetus with intrauterine death seen in 4 (2.79%) fetus and 1 (0.69%) had still birth. There were 2 intra uterine death and 1 still birth in severe thrombocytopenia group.

DISCUSSION

The mean age of women included in the study was 23.87±3.54 years. The most women, 34.48 % were in the group with gestational age of 28-32 weeks, followed by 44.82% in 33-36 weeks gestational age and the least, 20.68% women were from 37-40 weeks of gestational age .

The incidence of thrombocytopenia in our study was 36.25%. In a study by Borhany M et al ^[5], the incidence was at 42.8%. In a similar study conducted by Singh J. et al ^[6] showed incidence of thrombocytopenia was 34%.

The most common cause of thrombocytopenia in pregnancy was gestational thrombocytopenia seen in 75 (51.72%) women, followed by hypertensive disorders in 46 (31.72%) women. The coagulopathy was seen in 12 (8.28%) women, hepatic disease in 6 (4.14%) women. 5(3.45%) women had dengue IgM positive and 1 woman was diagnosed with ITP. In a study by Borhany M et al ^[5] causes of thrombocytopenia were gestational thrombocytopenia (GT) 72 (48%), acute fatty liver five (3.3%), pre-eclampsia in 11 (7.3%), and eclampsia seven (4.6%).

In a similar study conducted by Singh J. et al ^[6] the gestational thrombocytopenia accounted for majority of cases of thrombocytopenia in pregnancy (50%) followed by hypertensive

disorders (22.4%). It was further followed by ITP (11.11%) and dengue (5.5%).

As per study by Singh N et al (2012)^[7] Gestational thrombocytopenia was seen in 64.2%, obstetric in 22.1% and medical in 13.68% cases.

60 women had mild thrombocytopenia, 39 had moderate thrombocytopenia and 46 had severe thrombocytopenia. In study by Arkew M et al (2024)^[8] conducted in Ethiopia, among the thrombocytopenic study participants, 10 (35.7%) had mild TCP, 12 (42.9%) had moderate TCP and 4 (21.4%) of them had severe thrombocytopenia.

Complications were seen in 11 women with mild thrombocytopenia and 6 received transfusion, in 39 women with moderate thrombocytopenia, 12 had complications and 12 required transfusions and 46 women had severe thrombocytopenia of which 32 developed complications and 40 received transfusions. Out of 46 women with severe thrombocytopenia, the complications were in form of , 4 women with abruption placentae, post partum hemorrhage in 10 women, puerperal sepsis seen in 2 women, acute renal failure in 2 women, disseminated intravascular coagulopathy in 4 women, pulmonary edema in 2 women and vaginal hematoma in 2 women and muscle hematoma in 1 woman.

The lower segment casrean section was done for 67 (46.21%) women and 78 (53.79%) women had normal vaginal delivery. All the casreans were done for obstetric indications. As a precaution to avoid hematoma formation, the intra abdominal drains were kept in casrean in women with severe thrombocytopenia undergoing a casrean section. The drains were removed after post operative day 3 when there was less than 50cc output over 24hrs..

According to study by Borhany M et al^[5] out of the total of 150, 78 (52%) were through normal delivery while 67 (44.6%) patients underwent casrean section.

As per study by Singh N et al (2012)^[7] the lower segment casrean section was done for 67 (46.21%) women and 78 (53.79%) women had normal vaginal delivery.

90 (62.07%) women had no complications. 55 women had varied complications including abruptio placentae was seen in 10 (6.09%) women, postpartum hemorrhage in 21 (14.48%) women, puerperal sepsis in 5 (3.45%), acute renal failure in 4 (2.76%), disseminated intravascular coagulopathy in 7 (4.83%), pulmonary oedema in 3 (2.07%), hematoma formation was in 5 women with 3 (2.07%) having vaginal wall hematoma following a vaginal delivery and 2 (1.38%) had muscle hematoma. Women with muscle hematoma underwent a re laparotomy in order to drain the hematoma.

Most of the fetus 85 (58.62%) were delivered at term. However, 60 (41.38%) had a pre term delivery. There were no morbidity in 96 (66.21%) fetus. Rest 49 fetus had complications in form of fetal growth restriction in 18 (12.41%). NICU admission in 26 fetus, with 13 in severe thrombocytopenia group.

The mortality was seen in 5 fetus with intrauterine death seen in 4 (2.79%) fetus and 1 (0.69%) had still birth. There were 2 intra uterine death and 1 still birth in severe thrombocytopenia group.

CONCLUSION

The fetomaternal outcome is affected in patients with thrombocytopenia. The women with thrombocytopenia require a careful monitoring and proper examination to identify the cause . A proper antenatal care and encouraging institutional delivery enables proper diagnosis and early identification of complications enabling prompt and early interventions. Hence, improving the fetomaternal outcome.

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