Original Research Article

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Etiology, Obstetrical Risk Factors, Complications and Outcomes of Pregnancies Affected by Thrombocytopenia

K.S. Chitra[1], C. Shanthi[2]

Abstract

Background: To investigate the etiology, obstetrical risk factors, complications and outcomes of pregnancies affected by thrombocytopenia. *Methods:* Study was conducted on 100 pregnant women who had thrombocytopenia from may 2017 to September 2017, in Government Rajaji Hospital, Madurai, India. Clinical data including basic history, physical examination and investigations of those women were evaluated. *Results*: 36% of these women had viral infections as the commonest cause of thrombocytopenia. Gestational thrombocytopenia accounted 33%. Pregnancy specific hypertension and HELLP syndrome (hemolysis, elevated liver enzymes, and low platelets) accounted for 27% cases whereas in 4% of pregnant women, idiopathic thrombocytopenic purpura (ITP) was the causative factor. A higher rate of IUGR (Intrauterine growth restriction), placental abruption and labor induction was noted among those gravidas who had moderate to severe thrombocytopenia. *Conclusions*: Commonest cause of thrombocytopenia in pregnancy is viral infections as there was a viral fever outbreak at the time of our study period, followed by gestational thrombocytopenia, preeclampsia and HELLP syndrome. ITP is a rare cause of this disorder in pregnancy. Early detection and treatment of expected complications is the key focus in management of such cases.

Keywords: Etiology; Obstetrical Risk Factors; Complications; Outcomes; Thrombocytopenia.

[1]Professor [2]Professor & Head, Department of Obstetrics and Gynecology, Government Rajaji Hospital, Madurai, Tamil Nadu 625009, India.

Corresponding Author:
C. Shanthi,
Professor & Head, Department of Obstetrics and Gynecology, Government Rajaji Hospital, Madurai, Tamil Nadu 625009, India.
E-mail: oggrhmadurai@gmail.com

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Introduction

Thrombocytopenia is second only to anemia as the most common hematologic abnormality during pregnancy occurring in 7-10% of cases [1]. It may be a diagnostic and management problem, and has many causes, some of which are specific to pregnancy. Thrombocytopenia is classically defined as a platelet count of less than 150,000/μL caused by accelerated platelet destruction or decreased production. Platelet count of 100,000 to 150,000/μL, 50,000 to 100,000/μL and <50,000/μL are classified as mild, moderate and severe thrombocytopenia respectively.

Most existing studies have addressed a specific etiology of thrombocytopenia in pregnant women, but only a few have compared different etiologies. The present study was aimed at investigating the obstetric risk factors, severity of thrombocytopenia, mode of delivery and fetomaternal outcomes of pregnancies.

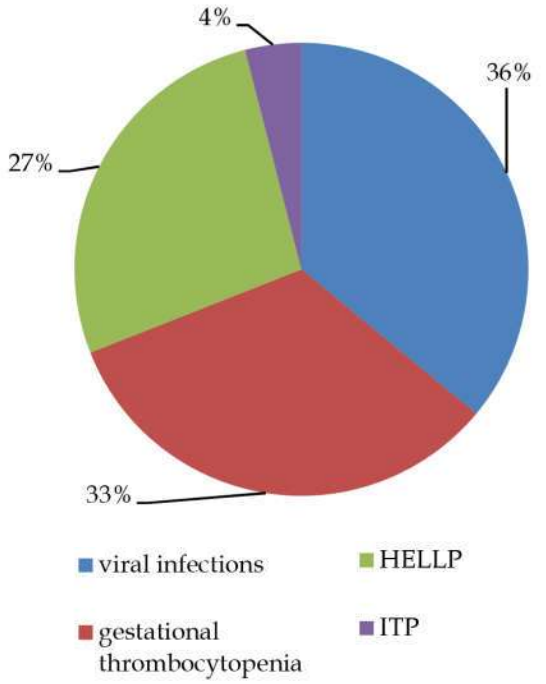
Methods

The study included 100 pregnant women with thrombocytopenia (platelet count <150,000/μL) identified by computerized hematology laboratory report at Govt Rajaji Hospital, Madurai during May 2017-September 2017. All clinical manifestations

and results of relevant laboratory tests were documented. The following clinical characteristics were evaluated: maternal age, parity, gestational age, past medical and menstrual history and the cause and severity of thrombocytopenia. The clinical characteristics and obstetrical risk factors were evaluated. Immediate neonatal outcome was also studied.

Results

Most common cause was found to be viral infections (36%) gestational thrombocytopenia (33%) followed by preeclampsia, eclampsia and HELLP syndrome which was seen in 27% cases. ITP accounted for only 4 % of the cases all of whom were diagnosed before pregnancy (Graph 1).



Graph 1: Distribution of patients according to etiology

Primiparous and second gravida with thrombocytopenia were nearly equal in prevalence (43%) followed by muliparous women which include 14%. Among 100 pregnant women 6%,30%, 64% fall under I, II and III trimester respectively (Table 1 & 2).

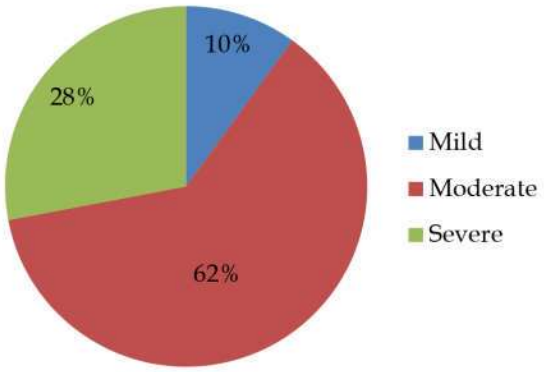
Table 1: Distribution according to parity and gestational age

Parity	Prevalnce (%)
Primigravida	43
2nd gravida	43
Multigravida	14

Table 2: Distribution according to parity and gestational age

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

Mild thrombocytopenia was seen in 10%, moderate thrombocytopenia in 62% which was the highest and severe thrombocytopenia accounted 28% (Graph 2).



Graph 2: According to severity of thrombocytopenia

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%) (Table 3).

Table 3: Obstetric risk factors in pregnant women according to etiology of thrombocytopenia

Risk Factors	Prevalence (%)
Anemia	36
Jaundice	26
Hypothyroid	12
Oligohydramnios	9
Gestational DM	7
IUGR	3
Pulmonary edema	3
Abruption	1

Labor induction was done in 21% of those who delivered vaginally included 42 women (73%) and CS (Cesarean Section) was done in 15 cases (26%) (Table 4).

Perinatal outcome of those who delivered during study period included low birth weight in 31%, Preterm 10% and IUD 7% (Table 5).

Table 4: Induction and mode of delivery

Vaginal delivery	73%
Cesarean section	21%

Table 7: Perinatal outcome

Low birth weight	31%
Preterm	10%
IUD	7%

Discussion

Thrombocytopenia, defined as blood platelet count below 150.000/μL is the second leading cause of blood disorders in pregnancy after anemia. It complicates 7 to 10% of all pregnancies.

Thrombocytopenia during pregnancy is a challenging task for obstetricians. Decreased platelet count may be a pregnancy induced disorder or a preconceptional condition. Although pathophysiology of unknown, it is thought to be due to dilutional effect and accelerated destruction as platelets pass over the scarred and damaged surface of placenta. In GT, there is no past history suggestive of thrombocytopenia and women are typically asymptomatic in early pregnancy. In majority of cases, the disorder remains benign but in some cases, it may become a risk for serious morbidity and mortality.

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. Viral infections in pregnancy carries risk of hemorrhage for both mother and fetus.there is serious risk of premature birth and fetal 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. ITP is caused by platelet destruction in the reticuloendothelial system, due to platelet auto-antibodies against several platelet membrane glycoprotein complexes.

The cause of thrombocytopenia from preeclampsia, eclampsia and HELLP syndrome is unknown but might be related to abnormal vascular tone with resultant accelerated platelet destruction, platelet activation, and coagulation defects. The main maternal concern in thrombocytopenia is hemorrhage during delivery or postpartum. Where the maternal platelet count remains low (<50,000/μL) around the time of delivery, platelets should be available on standby, but are likely to be destroyed quickly after transfusion due to immune process, so platelets administration should be timed judiciously and should be given in well-established rather than early labor, if there are increased bleeding complications. The challenge to the clinician is to weigh the risks of maternal and fetal bleeding complications against the benefits of diagnostic tests and interventions.

In present series a higher rate of preterm delivery (<37 weeks) were observed in parturients with moderate to severe thrombocytopenia in pregnancies affected by preeclampsia, eclampsia and HELLP syndrome.

Present study depicts higher prevalence of maternal anemia, jaundice, oligohydramnios and IUGR among patients with moderate thrombocytopenia. Higher incidence of labor induction and cesarean section was seen in patients with moderate to severe platelet deficiency. Fetal outcome, in our study, revealed higher incidence of premature and LBW babies in presence of moderate to severe thrombocytopenia. Thrombocytopenia in pregnancy does not significantly affect the Apgar score of neonate as far as present observations are concerned.

Conclusion

Viral infections is the most common cause of thrombocytopenia as encountered in our study which requires prompt antenatal management to avoid maternal complications and adverse perinatal outcomes. GT is the next common cause of thrombocytopenia in pregnancy and is not associated with any adverse event both for the mother or baby. Preeclampsia, eclampsia and HELLP syndrome constitute the third common etiological factor. ITP is a rare cause of thrombocytopenia in pregnant women accounting for about 4% of such cases. Although there is no risk of fetomaternal haemorrhagic complications in GT, thrombocytopenia caused by hypertensive disorders of pregnancy and ITP expose the mother and fetus to potentially fatal consequences which needs careful supervision. Proper evaluation and appropriate management by both the obstetrician and haematologist plays a significant role in preventing ensuing complications.

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