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Original Research Article

Thrombocytopenia in pregnancy

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ABSTRACT

Background: Thrombocytopenia in pregnancy is defined as platelet count of less than 150,000/µl. It may be inherited or idiopathic, acute or chronic in onset, either primary or associated with other disorders. Gestational thrombocytopenia is the most common type which is diagnosed usually in the last trimester. When there is severe thrombocytopenia, it is usually pathological in origin. The goal of this study was to identify thrombocytopenia in early stages of pregnancy and evaluate the risk factors involved. Aim was the evaluation of thrombocytopenia in pregnancy.
Methods: This was a prospective observational study conducted in the Obstetrics and Gynecology Department of a tertiary care centre from 1st January 2020 to 31st December 2020. Data was collected and analyzed by SPSS version 17.
Results: In the current study, 71.1% of cases were mild thrombocytopenia and 64.4% were picked up in the third trimester. Out of the 90 cases taken, 64% of the cases were due to the most common cause i.e., gestational thrombocytopenia. The second most common cause of thrombocytopenia was pregnancy induced hypertension which accounted for 18% of the total number of cases. Symptomatic thrombocytopenia of moderate and severe degree was seen in cases of PIH and ITP. 37.5% of the cases had underlying hypertension.
Conclusions: Timely identification and management of the cause of thrombocytopenia is crucial in the antenatal group of women. Although it is an incidental finding in most cases, when there is an underlying cause, severity of thrombocytopenia increases tremendously and has dire consequences. Every pregnant woman should undergo complete blood count examination once in each trimester to avoid maternal and fetal complications.

Keywords: Gestational, PIH, Preganacy, Thrombocytopenia

INTRODUCTION

Haematological disorders complicating pregnancy include anemia and thrombocytopenia. Thrombocytopenia in pregnancy is defined as platelet count of less than 150,000/ µl. It is diagnosed more frequently in the last decade because platelet counts are included in the complete blood counts. It may be inherited or idiopathic, acute or chronic in onset, either primary or associated with other disorders. A low platelet count is often an incidental feature of pregnancy, but it might also provide a biomarker of a coexisting systemic or gestational disorder and a potential reason for a maternal intervention or treatment that might pose harm to the fetus.[1] The common causes of thrombocytopenia in pregnancy are gestational thrombocytopenia, immune thrombocytopenia, thrombotic thrombocytopenia, preeclampsia and HELLP Syndrome.[2,3] Gestational thrombocytopenia is a physiological condition in pregnancy, observed mainly in the third trimester occurring due to hemodilution. When the value of platelets falls below 70,000/ µl, a pathological cause is suspected.[4]

This study was aimed at early antenatal identification of thrombocytopenia and evaluate the risk factors involved.

Prevention of maternal and fetal morbidity and mortality through timely diagnosis is the ultimate goal of the study.

Aims and objectives

Aim of this study was the evaluation of thrombocytopenia in pregnancy.

Objectives

To identify the prevalence of thrombocytopenia in antenatal patients attending the out-patient department of Obstetrics and Gynecology at Dhiraj Hospital. To identify the causes of thrombocytopenia in pregnancy. To evaluate the effect of thrombocytopenia on pregnancy outcome.

METHODS

A prospective observational study was conducted in Dhiraj Hospital after obtaining permission from the Institutional Ethics Committee. The study included 90 patients. Data was collected and analzyed by SPSS version 17.

Study population

All antenatal patients attending the out-patient Department of Dhiraj Hospital.

Study period

The study took place from 1st January 2020 to 31st December 2020.

Inclusion criteria

All antenatal patients attending the out-patient department of Dhiraj Hospital with total platelet counts <1,50,000/µl in any trimester were included to be a part of this study.

Exclusion criteria

There was no exclusion criteria.

In this study, a total of 90 antenatal cases with thrombocytopenia were identified from all the antenatal cases attending the outpatient department in a time span of one year. Study design was explained to the patients and participants were recruited in the study after obtaining informed consent. Patients with thrombocytopenia were identified in each trimester. The cause of thrombocytopenia was investigated and the complications that followed were correlated with the severity of thrombocytopenia. The maternal effects of thrombocytopenia in the antepartum period and immediate postpartum period upto 24 hours after delivery were studied.

RESULTS

Table 1 shows that there is no relationship between gravida status and thrombocytopenia.

Table 1: Distribution according to gravida status.

Status	Number	Percentage
Primigravida	22	24.44
Multigravida	57	63.33
Grand multigravida	5	5.55
Total	90	100

According to Table 2, the diagnosis of thrombocytopenia is more in the 3rd trimester. Mild degree of thrombocytopenia is the most common type where the maternal and fetal effects are minimum to almost nil.

Table 2: Gestational age at the time of diagnosis.

Gestational age	Mild	Moderate	Severe	Total
1st trimester	4	2	1	7
2nd trimester	15	8	2	25
3rd trimester	45	6	7	58
Total	64	16	10	90

According to Table 3, gestational thrombocytopenia is a milder form of the disease with mainly asymptomatic patients whereas thrombocytopenia associated with hypertension is of the severe category producing symptoms which affect the maternal and fetal wellbeing. Out of the non-gestational causes of thrombocytopenia, ITP is the most common cause.

Table 3: Distribution according to type.

Causes	Mild	Moderate	Severe	Total
Gestational	50	8	0	58
Associated with hypertension	10	2	4	16
ITP	6	2	1	9
Viral	2	1	1	4
Idiopathic	2	1	0	3
Total	70	14	6	90

Table 4. Maternal complications.

Complications	Yes	No	Total
Gestational	4	54	58
Associated with hypertension	8	8	16
Non-gestational	2	14	16
Total	14	76	90

According to Table 4, maternal complications such as antepartum and postpartum haemorrhage, anemia, shock, increased risk of infections, sepsis, DIC were significantly more in the patients who had associated hypertension. Out of all the cases of gestational

thrombocytopenia, only 6.89% of the cases had associated maternal complications whereas 50% of the cases of hypertension had complications.

DISCUSSION

Thrombocytopenia in pregnancy is a very common disorder of pregnancy, mainly asymptomatic and hence, often goes undiagnosed. In the last decade, the number of reported cases of thrombocytopenia have increased tremendously because of the automated blood count machines. In the present study, a total of ninety cases of thrombocytopenia were collected out of which 71.11% were mild, 17.7% were moderate and the rest 11.1% were severe. It was noted that out of 90, 64.44% of them were diagnosed in the third trimester. According to Boehlen et al, platelet counts fall in the third trimester leading to thrombocytopenia.[5]

The causes of thrombocytopenia are gestational, pregnancy induced hypertension, immune thrombocytopenic purpura (ITP), viral thrombocytopenia, pseudothrombocytopenia and idiopathic. Out of the 90 cases taken, 64% of the cases were gestational thrombocytopenia, 18% were due to pregnancy induced hypertension and the rest were due to non-gestational causes. Forgerty et al state in their study that 1-4% of cases of thrombocytopenia in pregnancy are due to ITP.[6]

In our study, 50% of the cases of PIH suffered from maternal complications. Moderate and severe thrombocytopenia constitutes 37.5 % of the cases of PIH which is similar to a study done by Jodkowska et al in 2015.[7] Moderate to severe thrombocytopenia is often secondary and may indicate a higher severity of the underlying disease, affecting perinatal complications. In newborns of mothers with moderate and severe thrombocytopenia a higher incidence of lower 5-minute Apgar score, intrauterine fetal growth restriction (IUGR) and stillbirths was observed.[8-10]

This study was conducted with a very small sample size of 90 participants over a span of one year only. The scope of this study is limited to maternal complications affecting the severity of thrombocytopenia. Fetal outcomes were not recorded in this study. This study was an observational study only and the patients were followed only upto the delivery of the baby. Post pregnancy recovery was not recorded in these patients due to loss to follow-up. Pre pregnancy records of most patients were not available.

CONCLUSION

Timely identification and management of the cause of thrombocytopenia is crucial in the antenatal group of women. Most of the cases of thrombocytopenia are incidental findings with asymptomatic patients. Pregnancy induced hypertension and HELLP syndrome and the second most common cause of thrombocytopenia. When ITP is the cause identified, Intravenous immunoglobulin and corticosteroids are used as the first line management options. Maternal complications like postpartum haemorrhage, abruptio, DIC require an immediate response to save the patient's life. Fetal complications like intrauterine growth restriction (IUGR) and intrauterine death can be avoided by timely intervention. Thus every pregnant woman should undergo a detailed blood count examination once in each trimester to identify the pattern of thrombocytopenia and to decide when and at what stage intervention is required.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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