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Original Research Article

A study of thrombocytopenia in pregnancy

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ABSTRACT

Background: Thrombocytopenia is defined as low platelet count and if it is present during pregnancy can jeopardize the maternal and fetal outcome. Thrombocytopenia occurs in 6-15% of pregnancies. Causes of thrombocytopenia include gestational, idiopathic thrombocytopenia, preeclampsia, HELLP, DIC, malignancy and marrow failure. Aim of this study was to find out the common causes of thrombocytopenia in this hospital and management being used.

Methods: Data was collected from those women who came to the antenatal clinic (booked) and labour room (unbooked) in the department of obstetrics and gynecology, GMERS Medical College and Hospital, Sola, Ahmedabad. Data of a total of 75 pregnant women were collected during the period of July 2018 to June 2019.

Results: There were 66.67% cases of gestational thrombocytopenia, 13.33% related to preeclampsia, 8% in Eclamptic patients, 2.67% in HELLP and DIC, 6.67% in ITP, and lastly 2.67% in dengue cases. There were number of associated complication whether directly related (PPH) or part of the disorder. PPH was observed in 22.67% which is maximum among all complications. Other complications were part of major associated illness i.e. liver failure (6.67%), renal failure (5.3%), DIC (5.3%) and HELLP (8%).

Conclusions: Mode of delivery was not influenced by platelet count, but for obstetric indications. Management of patients was as per the diagnosis. Single donor plasma is preferable to random donor plasma. PPH was the commonest complication and we should be wary of that.

Keywords: Disseminated intravascular coagulation, Hemolysis elevated liver enzymes low platelet count, Preeclampsia, Postpartum hemorrhage, Thrombocytopenia

INTRODUCTION

Thrombocytopenia is defined as low platelet count. If present during pregnancy, it can jeopardize the maternal and foetal outcome. Thrombocytopenia affects 6-15% of pregnancies. The increasing report of thrombocytopenia is also be attributed to better antenatal check-ups and performance of investigation like complete blood count (CBC).¹

It is defined as platelet count less than $150 \times 10^9/l$. Pregnancy does per se alter platelet level to a great extent,

but few changes take place, which are more pronounced towards term. Causes of thrombocytopenia include gestational, idiopathic thrombocytopenia, preeclampsia, HELLP, DIC, malignancy and marrow failure.²⁻⁴

During pregnancy there is a general downward drift in platelet count, particularly during the last trimester. This result, at term, in a level that is approximately 10% less than the pre-pregnancy level. The mechanisms for this are thought to be a combination of dilutional effects and acceleration of platelet destruction across the placenta. Most women still have platelet counts within the normal

range; however, if the starting count is at the lower end of the normal range, or there is a more severe drop, thrombocytopenia occurs. Hence thrombocytopenia is a common finding in pregnancy.

Most cases are mild and have no significance for mother or fetus but, in some instances, where thrombocytopenia is part of a complex clinical disorder, there can be profound and even life-threatening results for both mother and baby. The effect of pregnancy on the disorder and, conversely, of the disorder on the pregnancy, must be taken into account. In some instances, the aetiology is unique to pregnancy and the puerperium.

Aim of this study is to find out the common causes of thrombocytopenia in our hospital and management being used.

METHODS

Data was collected from those women who came to the antenatal clinic (booked) and labour room (unbooked) in the department of obstetrics and gynaecology, GMERS Medical College and Hospital, Sola, Ahmedabad. Data of a total of 75 pregnant women were collected during the period of July 2018 to June 2019.

Data collection was done on a pre-prepared proforma, which collected details of their antenatal history i.e., gestational age, risk factors, past obstetric history; and medical history i.e. viral infection, history of bleeding from gingiva, nose, skin petechiae, along with sociodemographic details. History of drug use was also taken. Thorough physical examination including obstetric examination was performed and noted. At the time of booking and labour room admission it is customary to do complete blood count of all gravid women in our set up. Routinely patients are investigated for HBsAg and HIV antenatally.

If thrombocytopenia was observed then patient was investigated further. Bleeding time, clotting time and coagulation test (PT, APTT) were done. Liver function test, renal function test and check-up for infections like dengue fever were done if symptoms were suggestive. Platelet count was repeated monthly if was found thrombocytopenic.

Patients were followed up through-out their gestational period. Feto-maternal outcomes were recorded. Any complication during antenatal period and delivery was noted. Mode of delivery, complications during delivery and postpartum complications in mother and NICU admission, neonatal outcome and birth weight of baby was recorded.

RESULTS

There were 66.67% cases of gestational thrombocytopenia, 13.33% related to preeclampsia, 8%

in eclamptic patients, 2.67% in HELLP and DIC, 6.67% in ITP, and lastly 2.67% in dengue cases. This suggest that maximum number of patients were in gestational thrombocytopenia group followed by pre-eclampsia patients (Table 1).

Table 1: Classification of thrombocytopenia as per aetiology.

Cause	Number (n = 75)	%
Gestational	51	66.67
Pre-eclampsia	10	13.33
Eclampsia	5	8
HELLP/DIC	2	2.67
ITP	5	6.67
Dengue	2	2.67

In this study majority of patients (56%) were having platelets level between 1-1.5 lacs followed by 26.67% people having platelets level between 50000-1 lac. No case were noted with platelets level below 10000 (Table 2).

Table 2: Severity of thrombocytopenia.

Platelet levels	Number of cases	%
< 10000	0	0
10000-50000	13	17.33
50000-100000	20	26.67
100000-150000	42	56

With 62.67% patients were in the age group between 18-26 follows by 33.33% between 26-35 age group and lowest being 4% between 36-46 years which suggests that chances of thrombocytopenia are more in the younger age groups (Table 3).

Table 3: Age.

Age in years	Number of cases	%
18-26	47	62.67
26-35	25	33.33
36-46	3	4

A total 65.33% were multipara and 34.67% were primi patients which suggests that chances of thrombocytopenia are higher in multigravida patients (Table 4).

Table 4: Parity.

Parity	Number of cases	%
Primi	26	34.67
Multi	49	65.33

There were number of associated complication whether directly related (PPH) or part of the disorder. PPH was observed in 22.67% which is maximum among all complications. Other complications were part of major

associated illness i.e., liver failure (6.67%), renal failure (5.3%), DIC (5.3%) and HELLP (8%) (Table 5).

Table 5: Maternal outcome.

Maternal complication	Number of cases	%
PPH	17	22.67
Liver failure	5	6.67
Renal failure	4	5.3
DIC	4	5.3
HELLP	6	8
Maternal death	0	0

Mode of delivery was decided based on the obstetric factors or medical factors. In this group there were 41% vaginal deliveries and rest were caesarean sections with 58% which suggests that caesarean sections were more (Table 6).

Table 6: Mode of delivery.

Mode of delivery	Number of cases	%
Vaginal	31	41.33
Caesarean section	44	58.67

Out of total 75 patients 45 number of patients delivered at term with 60% cases and 30 number of patients delivered prematurely with 40% cases. This suggest that babies delivered at term were greater in number than preterm (Table 7).

Table 7: Maturity of baby.

Maturity	Number of cases	%
Term	45	60
Preterm	30	40

DISCUSSION

Obstetric thrombocytopenia is a condition in which obstetric conditions i.e. severe preeclampsia, HELLP, DIC, abruption have resulted in thrombocytopenia whilst if it is ITP (Idiopathic thrombocytopenic purpura) then it is a medical condition to be dealt with during pregnancy.

Thrombocytopenia increases the risk of PPH, while the other associated obstetric and medical conditions (mentioned above along with anaemia and sepsis) increase the risk of multiple organ failure and maternal mortality.⁵⁻⁷

Mode of delivery was not influenced by platelet count, but for obstetric indications. Caesarean sections were done for abruption, severe preeclampsia, eclampsia, previous caesarean section, failed induction or failed progress of labour.

Neonates were examined for any hematomas and investigated for platelet count.⁸

Random donor platelets or single donor platelets were used depending upon the availability.

In case of PPH blood and blood products were used.

Steroids were continued in patients of ITP with medical consultation.

Follow up was done by monthly platelet count.

Gestational thrombocytopenia is the commonest cause of low platelet during pregnancy but other medical disorder must be excluded by through history, physical examination, and investigations.

If thrombocytopenia was pre-existing then a medical disorder is more likely while if it develops during pregnancy gestational cause is more likely.

Primary immune thrombocytopenia was managed as per protocol.⁹

CONCLUSION

Mode of delivery was not influenced by platelet count, but for obstetric indications. Management of patients was as per the diagnosis. Single donor plasma is preferable to random donor plasma. PPH was the commonest complication and authors should be wary of that.

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Conflict of interest: None declared

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

REFERENCES

- Boehlen F. Thrombocytopenia during pregnancy. Importance, diagnosis and management. *Hamostaseol.* 2006;26(1):72-4.
- Stirling Y, Woolf L, North WR, Seghatchian MJ, Meade TW. Haemostasis in normal pregnancy. *Thromb Haemostas.* 1984;52:176-82.
- Matthews JH, Benjamin S, Gill DS, Smith NA. Pregnancy associated thrombocytopenia: definition, incidence and natural history. *Acta Haematol Basel.* 1990;84:24-9.
- Fenton V, Saunders K, Cavillet I. The platelets count in pregnancy. *J Clin Path.* 1977;30:68-9.
- Shehata N, Burrows RF, Kelton JG. Gestational thrombocytopenia. *Clin Obstet Gynecol.* 1999;42:327-34.
- ACOG practice bulletin: diagnosis and management of preeclampsia in pregnancy. *Obstet Gynecol.* 2002;99:159-67.
- Barton JR, Sibai BM. Diagnosis and management of hemolysis, elevated liver enzymes and low platelets syndrome. *Clin Perinatol.* 2004;31:807-33.

8. Sullivan CA, Martin JN. Management of the obstetric patient with thrombocytopenia. *Clin Obstet Gynecol.* 1995;38(3):521-34.
9. Provan D, Stasi R, Newland AC, Blanchette VS, Maggs PB, Bussel JB, et al. International consensus report on the investigation and management of primary immune thrombocytopenia. *Blood.* 2010;115:168-86.

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