Scholars Journal of Applied Medical Sciences
Abbreviated Key Title: Sch J App Med Sci
ISSN 2347-954X (Print) | ISSN 2320-6691 (Online)
Journal homepage: www.saspublishers.com

OPEN ACCESS

Obstetrics and Gynaecology

Thrombocytopenia in Pregnancy – Causes and Fetomaternal Outcome

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DOI: 10.36347/sjams.2019.v07i10.036 | **Received:** 19.10.2019 | **Accepted:** 26.10.2019 | **Published:** 29.10.2019

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Abstract **Original Research Article**

Thrombocytopenia, the second most common haematological finding in pregnancy, is an underexplored condition among Indian women, whose etiology if properly diagnosed can lead to avoidance of unnecessary interventions and can be used as a prognostic factor of some pathology. This study is a prospective study conducted for a period of 1 year at Gauhati Medical College, Guwahati, to find out the causes, fetal and maternal outcome of patients with thrombocytopenia in pregnancy. Patients with thrombocytopenia (platelets less than 1, 50,000/mm^3) in their third trimester were recruited in the study. A total of 273 patients were recruited. These patients were followed up till their discharge. Gestational thrombocytopenia is the most common cause of thrombocytopenia found in the present study. Most of the patients had mild thrombocytopenia.

Keywords: Thrombocytopenia, pregnancy, fetal and maternal outcome.

INTRODUCTION

Thrombocytopenia is a common occurrence during pregnancy. It is the second most common haematological finding during pregnancy, next to anaemia [1]. Thrombocytopenia, defined as the platelet counts less than 150,000/mm^3, complicates 7% to 10% of all pregnancies [2]. Platelet count in normal pregnancies may decrease upto 10%, which occurs secondary to expansion of plasma volume [3]. Thrombocytopenia can be classified as mild (platelet count of 100,000/mm^3 to 150,000/mm^3), moderate (platelet count of 50,000/mm^3× to <100,000/mm^3) or severe (platelet count of <50,000/mm^3)[1]. Overall, gestational thrombocytopenia accounts for 75% of cases; 15-20% secondary to hypertensive disorders; 3-4% due to immune process; and the remaining 1-2% due to rare constitutional causes [4]. Gestational thrombocytopenia usually has no effect on pregnancy, labour and delivery or on the newborn. On the other hand, significant thrombocytopenia associated with other conditions can have serious maternal-fetal consequences and requires specific monitoring and appropriate management [5].

We conducted the present study to determine the causes of thrombocytopenia during pregnancy and to determine the feto-maternal outcome in those pregnancies complicated by thrombocytopenia.

MATERIALS AND METHODS

This was a hospital based prospective observational study, conducted in the Department of Obstetrics and Gynaecology, Gauhati Medical College and Hospital, Guwahati from 1st July 2018 to 30th June 2019.

INCLUSION CRITERIA

Patients with platelet count less than 150,000/mm^3 in their third trimester and who were willing to participate in the study.

EXCLUSION CRITERIA

- Refused participation
- Women with known haematological disorders
- Women with history of Diabetes Mellitus, collagen disorders, Tuberculosis, Epilepsy.
- Women with previous Caesarean section.

The present study was approved by the Institutional Ethics Committee of Gauhati Medical College and Hospital, Guwahati.

Blood specimen was withdrawn from the ante-cubital vein using a dry sterile disposable syringe and needle. 2ml of blood was dispensed into EDTA

anticoagulant tube. Platelet count assessment was done through automated blood count analyser with routine haematological evaluation of the patient. Detailed history was taken. Special investigations (RFT, LFT, Peripheral blood smear, smear for malarial parasites, dengue IgG and IgM antibodies) were done as and when needed. All cases were followed till discharge with the platelet count repeated on 10th postpartum day.

RESULTS AND OBSERVATIONS

Of the total 273 patients studied, the mean age group of antenatal mothers was 26.5± 4.5 years. Age has no influence on the occurrence of thrombocytopenia (p=0.701). 69.9% of cases were found to be Gestational Thrombocytopenia, 25.27% were associated with hypertensive disorders of pregnancy and 1.83% associated with HELLP syndrome. Pancytopenia, dengue, AFLP and ITP contributed to 0.7%, 0.7%, 0.3% and 1.09% respectively. Mild thrombocytopenia was noted in 56.77% of the total cases, moderate thrombocytopenia in 41.39 % and severe thrombocytopenia in 1.83% of cases.

Table-1: Distribution according to etiology

ETIOLOGY	NO. OF PATIENTS	%
Gestational thrombocytopenia	191	69.9
Hypertensive disorders	69	25.27
HELLP	5	1.83
Pancytopenia	2	0.7
Dengue	2	0.7
AFLP	1	0.3
ITP	3	1.09

Table-2: Severity of thrombocytopenia

SEVERITY	NUMBER OF PATIENTS	%
Mild	155	56.77
Moderate	111	41.39
Severe	7	1.83

Of the total 273 patients, 56.32% had vaginal delivery, 43.5% had LSCS. Caesarean section was done for obstetric indications. Presence of thrombocytopenia had no influence on the occurrence of thrombocytopenia. Of the total 273 patients, 77.65% had healthy babies, perinatal morbidity occurred in 17.94% cases and perinatal mortality in 4.02% cases. Babies of hypertensive mothers had the most NICU admissions and this was found to be statistically significant (p=0.0028).

Table-3: Fetal outcome according to etiology

Etiology	No. of patients	HEALTHY	MORTALITY	MORBIDITY (NICU ADMISSION)
Gestational thrombocytopenia	191	170(89%)	2(1%)	19(9.9%)
Hypertensive disorders including HELLP	74	40(56.5%)	9(11%)	25(31.8%)
Pancytopenia	2	0	0	2
Dengue	2	1	0	1
AFLP	1	1	0	0
ITP	3	0	0	3
TOTAL	273	212	11	50

Mortality occurred in 2 patients (on 2nd and 3rd postnatal day). Of the remaining 271 patients, 98.5% had normal platelet counts by 10th postpartum day. 1.5% had persistent thrombocytopenia. 2 patients with pancytopenia and 2 patients with ITP who had persistent thrombocytopenia were referred to the Department of Hematology, GMCH, for further management.

DISCUSSION

Thrombocytopenia is a commonly encountered hematological disorder in pregnancy, which is often underdiagnosed and mismanaged. In the present study, the most common cause of thrombocytopenia is gestational thrombocytopenia which contributed for 69% of cases. This is consistent with the study conducted by Monika Arora *et al*. [6] who reported 61% of gestational thrombocytopenia cases in their study. Another study by Vanaja *et al*. [7] also reported

gestational thrombocytopenia as the most common cause of thrombocytopenia which accounted for 64% of cases in their study. Maternal and foetal outcome was favourable in those cases with gestational thrombocytopenia. No case of severe thrombocytopenia was noted in this group.

Most of the patients in the present study belonged to the mild severity group (56.77%). This is consistent with the studies conducted at VMMC and Safdurjung Hospital by Vijay Zutushi *et al*. [8] and at Ethiopia by Asrie *et al*. [9] in 2014.

The platelet count returned to normal by 10^{th} postpartum day in 98.5% cases. Persistent thrombocytopenia was noted in 4 patients. This was similar to the finding by Vijay Zutshi *et al*. [8], who reported normalization of platelet counts in all cases of gestational thrombocytopenia in the postpartum period.

CONCLUSION

Thrombocytopenia is an underexplored condition among pregnant women in the Indian population. Often this condition, when diagnosed leads to mismanagement which results in unnecessary intervention resulting in adverse maternal and fetal effects. As gestational thrombocytopenia is usually mild or moderate, patients with severe thrombocytopenia should be investigated to rule out other causes.

The approach to a patient with thrombocytopenia in pregnancy is multidisciplinary, with close collaboration between obstetrician and hematologist. Hence, platelet count estimation should be a routine at first antenatal visit to achieve favorable fetomaternal outcome in all types of thrombocytopenia during pregnancy.

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