

Study of clinical profile and maternal outcome among patients with thrombocytopenia at tertiary health care centre: an observational study

Dr. Padmaja Joshi¹, Dr. Prapti Savant², Dr. Manasi Mitkari³, Dr. Manasi Kathaley⁴

1. Associate Professor, Department of Obstetrics and Gynecology, Dr. Vasant Rao Pawar Medical College Hospital and Research Center, Nashik, Maharashtra, India
2. Junior Resident, Department of Obstetrics and Gynecology, Dr. Vasant Rao Pawar Medical College, Hospital and Research Center, Nashik, Maharashtra, India
3. Junior Resident, Department of Obstetrics and Gynecology, Dr. Vasant Rao Pawar Medical College, Hospital and Research Center, Nashik, Maharashtra, India
4. Professor, Department of Obstetrics and Gynecology, Dr. Vasant Rao Pawar Medical College, Hospital and Research Center, Nashik, Maharashtra, India

Corresponding author

Dr. Manasi Kathaley

Professor, Department of Obstetrics and Gynecology, Dr. Vasant Rao Pawar Medical College, Hospital and Research Center, Nashik, Maharashtra, India

ABSTRACT

Background- Thrombocytopenia can initiate spontaneous bleeding and may cause serious maternal and neonatal complications. The aim of the study was to study etiological factors of thrombocytopenia and also to study maternal outcome and demographic characteristics in patients of thrombocytopenia.

Material and Methods- Retrospective observational study was conducted at tertiary care center from 1st January 2021 till 31st December 2021. Total 75 cases with maternal thrombocytopenia were included in the study after satisfying inclusion and exclusion criteria. Maternal age, Gestational age, Etiology of thrombocytopenia, Severity of thrombocytopenia, mode of delivery and maternal complications were recorded.

Results- Majority of the patients belonged to age group of 20-25 years (37 cases, 49.33%) and gestational age between 34-37 weeks (29 cases, 38.66%) followed by > 37 years (20 cases, 26.67%). Gestational thrombocytopenia was found to be the most common etiological factor (44 cases, 58.7%) followed by hypertensive disorders and its complications like preeclampsia, HELLP, Eclampsia (23 cases, 30.67%). Majority (39 cases 59.09%) delivered vaginally followed by LSCS (26 cases, 39.39%). Moderate thrombocytopenia i.e. 51,000-99,000 platelet count was found in 53.33% followed by mild thrombocytopenia in 33.33%. Maternal complications like APH in 4 cases (5.3%), PPH in 11 cases (14.6%), wound complication in 7 cases(9.3%) were found and 2 patients (2.6%) required obstetric hysterectomy. 43 cases (57.33%) required transfusion of blood and blood products and 16%

(21.33%) cases required ICU admission. No maternal mortality was found.

Conclusions- The present study concluded that the most common cause of thrombocytopenia being gestational thrombocytopenia and next being hypertensive disease complicating pregnancy. Pre eclampsia, HELLP, have the potential for serious maternal complications if not treated timely.

Key words- Gestational thrombocytopenia, HELLP, Pre eclampsia

INTRODUCTION

Most common hematological abnormalities in pregnancy are anemia and thrombocytopenia. Thrombocytopenia is seen affecting 6.6%-11.6% of pregnancy. [1] Among all causes of thrombocytopenia in pregnancy it maybe less complicated like gestational thrombocytopenia to as severe as preeclampsia, HELLP syndrome, DIC etc. Thrombocytopenia are divided into mild ($>_{100,000}$ to $<_{150,000}$ /ul), moderate ($>_{50,000}$ to $<_{100,000}$ /ul) and severe ($<_{50,000}$ /ul). [2] Mild thrombocytopenia can be managed conservatively but severe thrombocytopenia will need transfusion of blood products, increase in ICU stay, and increase in maternal morbidity and complications during delivery.[3] Among all causes gestational thrombocytopenia is most benign cause in pregnancy and is usually diagnosis of exclusion and resolves spontaneously after delivery.[4,5] Another common cause of thrombocytopenia observed in pregnancy is pre-eclampsia. It is most commonly seen in second and third trimesters. Pre eclampsia can be complicated with HELLP syndrome characterized by severe thrombocytopenia. [6,7]

Thrombocytopenia in pregnancy is challenging from its correct diagnosis to its effective timely management, therefore early identification for cause to specific treatment at tertiary center may improve and reduce maternal morbidity and mortality. [8,9]

The aims of the study was to study etiological factors of thrombocytopenia and also to study maternal outcome and demographic characteristics in patients of thrombocytopenia.

MATERIALS AND METHODS

The present study was conducted in the Department of Obstetrics and Gynecology, Dr. Vasantrao Pawar Medical College and hospital and Research Center, Nashik, Maharashtra.

Study design- Retrospective observational study.

Duration of study- 1st January 2021 - 31st December 2021

Inclusion criteria:

All pregnant women admitted in ward beyond 28 weeks of gestation with platelet counts less than 1.5 lakh per cubic mm

Exclusion criteria:

Pregnant women were excluded from the study if they were having

- Chronic liver disease
- Gestation less than 28 weeks

- History of Idiopathic Thrombocytopenic Purpura
- Patients on warfarin or any anticoagulant therapy

Methodology

After satisfying the inclusion and exclusion criteria, 75 pregnant patients with thrombocytopenia were included in our study. Detailed history including age, gestational age, presenting complaints, menstrual, obstetric, past, personal history was collected. Information regarding general, systemic and complete obstetric examination was noted. Necessary data of investigations including urine routine microscopy, CBC, PBS, LFT, RFT, coagulation profile, malarial antigen, Dengue IgG and IgM antibodies, abdominal and obstetric ultrasound was recorded. Platelet count assessment was done through automated blood analyser and manual method with routine antenatal haematological blood evaluation. The diagnosis was inferred from the above investigations. The diagnosis of ITP was made according to the guidelines of the American Hematology Association and preeclampsia according to those of the International Society for Study of Hypertension in Pregnancy. Platelet count of $1,00,000/\text{mm}^3$ to $1,50,000/\text{mm}^3$ was classified as mild thrombocytopenia, $50,000/\text{mm}^3$ to $<1,00,000/\text{mm}^3$ as moderate thrombocytopenia and $<50,000/\text{mm}^3$ as severe thrombocytopenia. All the cases were followed till discharge to record duration of pregnancy at the time of delivery, indication of induction and method (if required) and mode of delivery including indication for instrumental delivery or caesarean section, need for obstetric hysterectomy. Progress of labour was monitored with partograph. Maternal complications like APH, PPH, Need of OH, Need of ICU admission and transfusion of blood and blood products recorded. The platelet count was repeated 10 days after delivery.

Statistical Analysis

The recorded data was compiled and entered in a spreadsheet computer program (Microsoft Excel 2010) and then exported to data editor page of SPSS version 20 (SPSS Inc., Chicago, Illinois, USA). Descriptive statistics included computation of percentages, means and standard deviations were calculated. The level of confidence interval and p-value were set at 95% and 5%.

OBSERVATIONS AND RESULTS:

TABLE 1: AGE DISTRIBUTION OF THE STUDY POPULATION

Age(years)	Frequency	Percentage
<20	6	8
21-25	37	49.33
26-30	24	32
31-35	7	9.3
>36	1	1.3
Total	75	100

Majority of patients belonged to the age group of 21- 25 years.(37 cases, 49.33%). Mean age was 25.6 years. Majority of them found between gestational age 34-37 (29 cases, 38.66%) followed by <34 weeks (26 cases, 34.67%) and >37 weeks(20 cases, 26.66%)

TABLE2:GESTATIONALAGEOFTHESTUDYPOPULATION

Gestational age (weeks)	Frequency	Percentage
<34	26	34.67
34-37	29	38.66
>37	20	26.66
Total	75	100

TABLE 3: ETIOLOGYOFTHROMBOCYTOPENIAIN PREGNANCY

Etiology	No. of patients	Percentage
Gestational thrombocytopenia	44	58.67
Hypertensive disorders complications such as (Pre eclampsia, eclampsia, HELLP etc)	23	30.67
Dengue	3	4
Malaria	2	2.66
Hepatitis	1	1.33
DIC	2	2.66
TOTAL	75	100

Among 75 cases, Gestational thrombocytopenia was found to be the most common etio- logical factor (44 cases, 58.7%) followed by hypertensive disorders and its complications like pre eclampsia, HELLP, Eclampsia (23 cases, 30.67%), Dengue (3 cases, 4%), DIC and malaria (2 cases, 2.66%) each.

TABLE 4: SEVERITY ON THROMBOCYTOPENIA

	Frequency	Percentage
MILD (100000-150000)	25	33.33
MODERATE (51000-99999)	40	53.33
SEVERE (<50000)	10	13.33

Total	75	100
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Moderate thrombocytopenia i.e. 51,000-99,000 platelet count was found in 40 cases, 53.33% followed by mild thrombocytopenia in 25 cases, 33.33%

TABLE5:MODE OF DELIVERY IN THE STUDY POPULATION

Mode of delivery	No. of patients	Percentage
Vaginal delivery	39	59.09
LSCS	26	39.39
Instrumental delivery	1	1.5
Conservatively managed	9	12
Total	75	100

Vaginal delivery was preferred mode of delivery (39 cases, 59.09%) followed by LSCS (26 cases, 39.3%), and instrumental delivery (1 case, 1.5%).

TABLE 6: MATERNAL COMPLICATIONS

Maternal complications	No. of patients	Percentage
APH	4	5.3
PPH	11	14.6
Obstetric hysterectomy	2	2.6
Wound complications	7	9.3
ICU admissions	16	21.33
Transfusion of blood products	43	57.33
Mortality	NIL	NIL

Maternal complications like APH observed in 4 cases (5.3%), PPH in 11 cases (14.6%), wound complications in 7 cases (9.3%), 43 cases (57.33%) required transfusion of blood or blood products. Out of 11 cases of PPH, 2 patients required obstetric hysterectomy. Majority 42 cases (56%) cases were admitted in HDU, 17 cases (22.67%) were managed in ward. Only 16 cases (21.33%) required ICU admission. No maternal mortality recorded.

DISCUSSION

Our study included 75 cases of maternal thrombocytopenia admitted at tertiary care center between 1st January till 31 st January 2021.

Mean age of patients in our study was 25.6 years with majority cases between age group 21-25 years.

In the study by Minal et al in 2019, average age of patients was 25.27 years. [10]

In study by Wang et al in 2010, average age of patient was 29 years. [11]

As per the study done by Jigyasa S et al in 2020, thrombocytopenia was seen most commonly between gestational age 33-36 weeks (42 cases, 46.66%). Similarly in our study, thrombocytopenia seen most commonly between gestational age 34-37 weeks (29 cases, 38.66%). [12]

Our study was aimed at investigating the causes decreased platelet count and maternal outcome in various causes of thrombocytopenia. In study conducted by Saino et al (2000), gestational thrombocytopenia was found in 81% cases and pre eclampsia in 16% cases and ITP in 3% of cases. [5]

In study conducted by Salil et al in 2019, gestational thrombocytopenia accounted for 66%, ITP 12%, HELLP 10%, and dengue (10%). [13]

Study done by Anita et al in 2017 found gestational thrombocytopenia in 64% and hypertensive disorder in 21% of study population. [14]

Similar to above study, In our study, Out of 75 cases of maternal thrombocytopenia, Gestational thrombocytopenia was most common (44 cases, 58.67%) followed by hypertensive disorders (23 cases, 30.67%).

Lack of health awareness, late diagnosis and late referral to higher center could be the contributing factor for higher percentage of thrombocytopenia due to pre eclampsia in our study.

As per the study done by Jigyasa et al in 2020, 32 cases (35.55%) had mild, 22 cases (24.44%) had moderate, and 36 cases (40%) had severe thrombocytopenia. But in our study most of the cases, 40 (53.33%) belonged to moderate thrombocytopenia category while 25 cases (33.33%) had mild and 10 cases (13.33%) had severe thrombocytopenia. [12]

Out of 75 patients included in our study, 66 patients delivered. 39 cases (59%) delivered vaginally. 26 cases (39.39%) required LSCS. 1 case (1.5%) required instrumental delivery. 9 cases were managed conservatively.

In study conducted by Nisha et al (2012), 61.54% patient had vaginal delivery, 36.26% had LSCS and 2.2% had instrumental delivery. [15]

As per the study done by Gaba et al in 2020, maternal complications like APH was seen in 7.5%, PPH in 20%, wound complications in 14%. [16]

A study done by Harde et al in 2019 found APH in 7.3%, PPH in 16%. 8% patient required ICU admission and 18.7% required transfusion. [17]

Similarly in our study, APH was seen in 5.3%, PPH in 14.6%, wound complications in 9.3%. Two patients required obstetric hysterectomy and 43 cases (57.33%) required transfusion of blood and blood products which is higher than above mentioned studies and could be due to higher percentage of cases in moderate to severe thrombocytopenia category.

No mortality was seen.

CONCLUSION

The present study concluded that the most common cause of thrombocytopenia being gestational thrombocytopenia and next being hypertensive disease complicating pregnancy.

Pre eclampsia, HELLP, have the potential for serious maternal complications if not treated timely. Education and health awareness among expectant mothers regarding seeking early medical attention can prevent maternal morbidity and mortality.

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