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Prevalence of Thrombocytopenia during Pregnancy & Its Effect on Pregnancy & Neonatal Outcome

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Abstract **Original Research Article**

Background: To study the Prevalence of thrombocytopenia during pregnancy and its effect on pregnancy and neonatal outcome. ***Methods:*** It was a prospective 6 month study of pregnancy with thrombocytopenia. The cause of thrombocytopenia and feto-maternal outcomes in pregnancy with thrombocytopenia was studied. ***Results:*** Among 3790 deliveries, total 100 women were having thrombocytopenia. The commonest etiology was gestational thrombocytopenia 66%. Maternal complications was Placental abruption 5%, PPH 9%, episiotomy hematoma 5%, C.S. wound hematoma 1%,whole blood &PRBC transfusion 26%, platelet transfusion 23%, FFP transfusion 10% and ICU admission 7% were noted. Fetal complications were–APGAR score at 1 min. (<7) 59%, APGAR score at 5 min. (<7) 43%, IUFD 2%, NICU admission 21%, and neonatal thrombocytopenia 1%, IUGR 4%. ***Conclusion:*** Feto-maternal complications with thrombocytopenia depend primarily on the disease causing it. Gestational thrombocytopenia is most common cause of thrombocytopenia, preeclampsia, HELLP syndrome, malaria, ITP and dengue were other causes of thrombocytopenia in pregnant. Patients with Gestational thrombocytopenia have better maternal and peri-natal outcomes as compared to preeclampsia and HELLP syndrome.

Keywords: Prevalence, Thrombocytopenia, Pregnancy.

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INTRODUCTION

Thrombocytopenia is a disorder of the platelets, define as platelet count less than 150 x 10^9 /L [1,2]. Normal platelet count in blood is 150 - 450 x 10^9 /L. It is the second most common hematological disorder after anemia as the most common hematological abnormality in pregnancy [3]. Thrombocytopenia develops in 5% to 10% of women during pregnancy or in immediate postpartum period [4].

MATERIALS AND METHODS

Type of study
Descriptive Study

Study design
Prospective study

Duration of study
June 2018 to November 2018

Place of study
Department of Obstetrics and Gynecology, SMS Medical College and Attached Group of Hospitals, Jaipur.

Study universe
Women undergone antenatal check-up in ANC and delivered in the Department of Obstetrics and Gynecology, SMS Medical College and Attached Group of Hospitals, Jaipur.

INCLUSION CRITERIA

- All pregnant women who have diagnosed thrombocytopenia and newly diagnosed thrombocytopenia.
- All pregnant women agree for complete blood count check-up.
- Women willing to give consent for participate in the study.

METHODOLOGY

- Pregnant women have thrombocytopenia was selected.
- Informed consent of the patient was taken prior to study.
- To control inter-observer variability same method of sample collection, same complete blood cell counter machine and same reagents, almost same antenatal prescription used and all data was observed by the investigator herself.
- Baseline investigations like complete haemogram, blood group and Rh typing, urine analysis, VDRL, HBsAg and HIV serology were carried out in all patients.

OBSERVATIONS

Table-1: Prevalence of thrombocytopenia

Total deliveries	Cases of thrombocytopenia	Prevalence
3790	100	2.63 %

Table 1 shows, total of 3790 patients delivered in labor ward of Zenana hospital, S. M. S. Medical College Jaipur during the study period. Out of them, 100 patients had thrombocytopenia. Thus the prevalence was found to be 2.63%.

Table-2: Distribution of cases according to causes of thrombocytopenia

CAUSE	No. of patients	Percentage
Gestational thrombocytopenia	66	66
Hypertensive disorder of pregnany	23	23
ITP	1	1
Malaria	6	6
Dengue	4	4

As shown in table 2: most common cause of thrombocytopenia in pregnancy is gestational thrombocytopenia (66 %), hypertensive disorder of pregnancy (preeclampsia, eclampsia) is second most common cause (23 %), 1 % due to ITP, 6 % due to malaria and 4% due to dengue.

Table-3: Distribution of cases according to maternal outcome

Maternal outcome	No. of patients	Percentage
Abruption	5	5 %
PPH	9	9 %
Episiotomy hematoma	5	5 %
C.S. wound hematoma	1	1 %
Whole blood / PRBC transfusion	26	26 %
Platelet transfusion	23	23 %
FFP transfusion	10	10 %
ICU admission	7	7 %

Table 3 shows that PPH is the most common maternal complication 9% followed by abruption 5%, patient having episiotomy hematoma are 5%, 1% cases having C.S. wound hematoma, 26 % patients were transfused whole blood or PRBC, 23% were transfused platelets and 10 % were transfused FFP. 7% patients were required ICU admission.

Table-4: Distribution of cases according to fetal outcome

Fetal outcome	No. of patients	Percentage
Apgar score at 1 min (<7)	59	59%
Apgar score at 5 min (<7)	43	43%
IUFD	2	2%
SB	0	0%
NICU admission	21	21%
Neonatal thrombocytopenia	1	1%
IUGR	4	4%
ICH	0	0%

Table 4 shows APGAR score < 7/10 at 1 min and 5 min are 58 % and 43 % respectively. 2 % are IUFD, 1 % is SB, 21 % newborn is admitted in NICU, neonatal thrombocytopenia is reported in 1 % cases. 4 % newborn is IUGR due to HDP and nutritional deficiency. Newborn with intracranial hemorrhage due to thrombocytopenia were not reported in present study.

RESULTS

Results: Among 3790 deliveries, total 100 women were having thrombocytopenia. Gestational thrombocytopenia causes 66% case, HDP causes 23% case, ITP causes 1% case, malaria 6% and Dengue cause 4% case.

Maternal complications was Placental abruption 5%, PPH 9%, episiotomy hematoma 5%, C.S. wound hematoma 1%,whole blood &PRBC transfusion 26%, platelet transfusion 23%, FFP transfusion 10% and ICU admission 7% were noted.

Fetal complications were–APGAR score at 1 min. (<7) 59%, APGAR score at 5 min.(<7) 43%, IUFD 2% ,NICU admission 21%, and neonatal thrombocytopenia 1%,IUGR 4% .

DISCUSSION

Prevalence of thrombocytopenia in our study is 2.63% similar to a study by Shashikala karanth *et al*. [5], 2.25 %. In another study Varghese S *et al*.[6], prevalence is 4.2 %, comparable with present study. However, the prevalence of this study was lower than in studies by Asrie *et al*. [7], Arora *et al*.[8] P Dwivedi *et al*. [9] and Singh S *et al*. [10], the prevalence were 8.8 %, 9.4 %, 8.17 % and 8.8 % respectively.

Maternal complication were mainly abruption (5%), PPH (9%). In a study Arora *et al*. [8] (2017), 6.6 % mothers complicating by abruption. Which is similar to present study. In a study Singh S *et al*. [10], 9.8 % cases face PPH, which is comparable to present study, but in another studies such as Arora *et al*. [7], Vesna *et al*.[11] and Shashikala Karanth *et al*. [5] the PPH is 4.3 %, 2 % and 4.3 % respectively which is lower than present study. This is because of most of patients having anemia, HDP, unbooked and different sociodemographic conditions. These complications were due to impaired haemostasis and ongoing bleed. Other maternal complications includes caesarean wound hematoma (1%), episiotomy site hematoma (5%), these are less than a study Arora *et al*. [8] 3.6 %, in studies conducted by Shashikala Karanth *et al*. [5] 0%, Varghese S *et al*. [6] 0% and P Dwivedi *et al*. [9] 0%. This is because of more patient load at this tertiary center due to most of patient refered from wide peripheral area where lack of speciality services.

There were no maternal deaths in our study as compared to Shashikala karanth *et al*. [5], Nisha S *et al*. and Usha *et al*. where they reported 2 %, 5.26% and 4.37% maternal mortality respectively. This is due to strict surveillance and management.

The present study shows thrombocytopenia is not directly related to maternal outcome, there are also other factors which influence the maternal outcome like anemia, preeclampsia, sepsis etc. thrombocytopenia is an additional factor and not independent factor.

In our study 59 % newborn were having APGAR score <7 at 1 min. some of them get improved in 5 minutes. So 43 % were having APGAR score <7 at 5 min. Whereas Shashikala karanth *et al*. [5] observed APGAR 29.78 % < 7 at 1 min. and 8.5% having APGAR < 7 at 5 min. which similar to present study but Arora *et al*. [8] observed 9.45% and 6.57% newborn APGAR <7 at 1min and 5 min respectively. This difference due to high cases of hypertensive disorder of pregnancy which leads to more newborn with IUGR and low birth weight in present study.

In our study IUFD and Still Birth newborn were 2% & 0% respectively.1% newborn having neonatal thrombocytopenia, Abruption and hypertensive disorder of pregnancy were major factor contributing to this worse fetal outcome. About 1% (1case) newborn was neonatal thrombocytopenia. In studies conducted by Wang *et al*. [12] and Vesna *et al*. [11] neonatal thrombocytopenia 7.7% and 8% respectively. In another study by Shashikala karanth *et al*. [5] the neonatal thrombocytopenia was 18.45%, which is much more than present study. This is shows that mother having ITP and hypertensive disorder of pregnancy with severe thrombocytopenia may cause neonatal thrombocytopenia. Otherwise maternal thrombocytopenia is not a predictive factor for neonatal thrombocytopenia .The prevalence of IUGR is 4%. In study conducted by Vesna *et al*.[8] and M Parnas *et al*. [13] the IUGR were 8% and 8.5% respectively. These results were consistent with result of present study. In another study by Shashikala karanth *et al*. [5] the IUGR newborns were 46.6%. Their study result was much higher than most of studies as discuss in table below, because of most of pregnant women of their study group are hypertensive disorder of pregnancy.But in our study 66% cases of gestational thrombocytopenia.

CONCLUSION

Gestational thrombocytopenia is the commonest cause of thrombocytopenia may not be related to adverse pregnancy outcome thus can be treated as benign condition. Gestational thrombocytopenia is associated with better maternal and perinatal outcome as compared to HDP and ITP which expose them to life threatening complication as placental abruption, PPH, Birth Asphyxia, and Still Birth. Thus accurate etiological diagnosis is essential for optimal therapeutic management. A careful examination and simple laboratory test CBC are needed

for diagnosis. Clinical assessment is most important factor for evaluating a patient with thrombocytopenia.

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