

Effect of Thrombocytopenia on Age and Method of Delivery among Pregnant Women in Late Trimester

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ABSTRACT

Aim: To evaluate the effect of thrombocytopenia in pregnant women.

Study design: Descriptive cross-sectional hospital based study

Place and duration of study: Department of Obstetrics & Gynaecology, Liaquat University of Medical and Health Science Jamshoro from 1st June 2018 to 31st June 2019.

Methodology: One hundred and seventy-six patients were observed. Women with pre-eclampsia, platelets less than 50×10^{10} , singleton pregnancy and pregnancy greater than 32 weeks were included.

Results: Most of the participants 91(51.9%) were 26 to 30 years with mean age was 30.71 ± 4.45 years. Gestational duration in last trimester was 50(28.4%), 98(55.7%) and 28 (15.9%) of 28 to 32 Weeks, 32 to 36 Weeks and greater than 36 weeks respectively. Mean gestational duration was 35.11 ± 2.3 Weeks. Seventy-one were falling in range of platelets of 30×10^{10} to 40×10^{10} (40.3%). Others were 46 (26.1%) of $>40 \times 10^{10}$, 43(24.4%) of 20×10^{10} - 30×10^{10} and 16(9.1%) of 10×10^{10} - 20×10^{10} . One hundred and 41(80.1%) had vaginal deliveries and 35(19.9%) had lower segment caesarean section deliveries.

Conclusion: The young participants of thrombocytopenia were more prevalent than old age participants.

Keywords: Gestational thrombocytopenia, Platelet count, Pregnancy

INTRODUCTION

In pregnant ladies, there may be 7%-11% got thrombocytopenia in all age groups¹. Regarding types, gestational thrombocytopenia is more prevalent than other types. With other mild to severe complications like High blood pressure, Gestational diabetes, Infections, Miscarriage and still birth²; thrombocytopenia occurs as hematologic complication in pregnant women at any stage of pregnancy. Thrombocytopenia arises during and after pregnancy, that is a condition in which an individual have abnormal level of platelets³. There are different classifications used for abnormal levels of thrombocytopenia. One classification is mild, moderate and severe loss of platelets. Respective numbers classified for mild, moderate and severe are 100 - $150 \times 10^9/L$, 50 - $100 \times 10^9/L$ and $50 \times 10^9/L$.⁴

There are different causes for this reduction of platelets count⁵, about 10% of pregnant ladies could be affected by thrombocytopenia.⁶ As levels of platelets are classified, in same way types of thrombocytopenia are also classified in many different ways. Major types include, pregnancy-associated thrombocytopenia (PAT)/gestational thrombocytopenia which is about 65% or more⁷, idiopathic thrombocytopenia/immune thrombocytopenia (ITP) and hypertensive disorder in pregnancy (PIH).

Regarding pregnancy-associated thrombocytopenia/Gestational thrombocytopenia, cause of this type is not yet clear. But it is assumed that it may occur because of hemodilution in pregnant cases and within placenta annihilation of thrombocytes^{8,9}. Pregnancy-associated thrombocytopenia falls in category when number of platelets must be better than $70 \times 10^9/L$ ¹⁰. Usually PAT

doesn't occur at initial stage of pregnancy but at late stage frequently in third trimester it happens. It is good to know that with care and consideration within 12 weeks of delivery number of platelets comes to normal level in blood¹¹⁻¹³. In PAT, it is possible that an insignificant hemorrhage may occur to mother but in many cases PAT is measured as insignificant type of thrombocytopenia in prenatal ladies.

In some cases, auto-antibodies platelets come out in immune thrombocytopenia ITP, those auto-antibodies with platelets destruct platelets membrane which reduces clotting of blood, in result thrombocytes reduced very quickly.¹⁴ As compare to PAT, ITP need more care and consideration in prenatal as well as in postnatal stage because of severe reduction in number of platelets which consequently increases risk of maternal hemorrhage. On other hand ITP cases are not more than 5% rather that PAT, it is categorized by a modest to severe reduction in the platelet count.^{15,16}

Generally neonatal babies are at very low risk of decreased platelets count. After delivery of child, mother with thrombocytopenia may gain enough platelets count in less than one week.¹⁷ While some causes of thrombocytopenia, such as incidental thrombocytopenia of pregnancy, have no impact on pregnancy outcomes than others.¹⁸ In late stage of thrombocytopenia risk of postpartum hemorrhaging, neonatal asphyxia and other conditions rise in pregnancy⁹.

In antenatal and postnatal cases of thrombocytopenia, uses of medicines are usually to maintain harmless level of platelet count. Treatment generally contains steroids and intravenous immunoglobulin¹⁹.

The aim of this study is to evaluate effect of thrombocytopenia on pregnant women. This study will help to decide which age group is more prevalent among thrombocytopenic pregnant women, how much late

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thrombocytopenia occurs in third trimester and which method of delivery is prevalent in among thrombocytopenic pregnant women.

MATERIALS AND METHODS

This was a descriptive retrospective cross-sectional study of antenatal and postnatal women with thrombocytopenia attended Department of Obstetrics & Gynaecology Liaquat University of Medical & Health Sciences Jamshoro from 1st June 2018 to 31st June 2019. All pregnant women were admitted to labor ward with thrombocytopenia with platelet count less than 50×10^{10} . Women with pre-eclampsia, platelets less than 50×10^{10} , singleton pregnancy and pregnancy greater than 32 week were included. Ladies with multiple pregnancy, gestational diabetic mellitus, chronic hypertension and K/C of autoimmune thrombocytopenia (ITP) were not included study due multiple factors. Data was entered and analyzed in SPSS 20.

RESULTS

Ninety-one (51.9%) women belonged to 26-30 years, 39(22.2%) of 31-35 years, 26(14.8%) of 21-25 years, 16(9.1%) of 36-40 years and 4(2.3%) of 41-45 with mean age was 30.71 ± 4.45 years.

Table 1: Demographic information of the patients (n=176)

Variable	No.	%
Age (years)		
21-25	26	14.8
26-30	91	51.7
31-35	39	22.2
36-40	16	9.1
41-45	4	2.3
Body mass index (kg/m²)		
21-25	47	26.7
26-30	64	36.4
31-35	38	21.6
36-40	27	15.3
Duration of gestation (weeks)		
28-32	28	15.9
32-36	98	55.7
>32	50	28.4
Hemoglobin level		
3-6	28	15.9
6-9	129	73.3
9-12	19	10.8
Platelets level ($\times 10^{10}$)		
10-20	16	9.1
20-30	43	24.4
30-40	71	40.3
>40	46	26.1
Mode of delivery		
LSCS	35	19.9
Vaginal delivery	141	80.1
Baby health		
Need of ICU	4	2.3
Healthy	172	97.7

The level of BMI among 21-25 were in 47(26.7%), 26-30 in 64(36.4%), 31-35 in 38(21.6%) and 36-40 in 27(15.3%) with mean BMI was 29.68 ± 5.1 . Gestational duration in their last trimester were 50(28.4%), 98 (55.7%) and 28(15.9%) of 28 to 32 weeks, 32 to 36 weeks and greater than 36

weeks respectively. Mean gestational duration were 35.11 ± 2.3 weeks. Seventy-one (40.3%) women were falling in range of 30×10^{10} to 40×10^{10} platelets count. Other levels of platelets were 46(26.1%) of $>40 \times 10^{10}$, 43(24.4%) of 20×10^{10} - 30×10^{10} and 16(9.1%) of 10×10^{10} - 20×10^{10} .

The hemoglobin level was 3-6 among 28 (15.9%) participants, 6-9 in 129(73.3%) and 9-12 in 19(10.8%) participants. Most of the participants 141(80.1%) were handled with vaginal delivery method and rest of participants 35(19.9%) needed lower segment caesarean section (Table 1).

DISCUSSION

We have tried to figure out, in what age group it is more prevalent, in which gestational age thrombocytopenia is more than in other and which level is more usual of platelets in thrombocytopenia. We observed that it is more prevalent in 26 to 30 years of age group than other age groups.

Mainly pregnant participates, more than half of total, observed thrombocytopenia occurs in between 32 to 36 weeks of pregnancy which is late trimester of pregnancy. This resembles with study conducted by Crowther et al²⁰ who described that gestational thrombocytopenia in pregnancy is a condition that advances mostly in the late second or third trimester. Another study conducted at Nigeria showed that gestational thrombocytopenia progresses from first to third trimester consistently.²¹ A study conducted at late trimester of pregnancy by Sainio²² showed more pregnant women become thrombocytopenic at late stage of pregnancy.

We observed 40.3% participants had mild platelets count, $30-40 \times 10^{10}$. This agrees with the outcome of Boehlen²³, who stated that gestational thrombocytopenia is frequently mild. Calderwood²⁴ suggested that generally most of the women with thrombocytopenia remain asymptomatic because of pro-coagulant state which is getting better with levels of fibrinogen, and inhibited fibrinolysis. Ajibola et al²¹ reported that maximum of the cases of thrombocytopenia (78.4%) were mild with platelet counts above $100 \times 10^9/L$. Myers²⁵ reported that maximum cases of thrombocytopenia in pregnancy are mild, with no adverse consequence for mother or baby, occasionally a low platelet count may be part of a composite disorder with greater morbidity and may (seldom) be life-threatening.

In the present study, 80.1% has been delivered babies with vaginal delivery method. Myers²⁵ reported that mode of delivery must be established on obstetric considerations assumed there is no evidence that caesarean section is harmless for the foetus with thrombocytopenia than an uncomplicated vaginal delivery, which is typically safer than caesarean section for the mother. Ciobanu²⁶ suggested that vaginal delivery is safe when platelet count is higher than 30.000/iL for operative vaginal or caesarean deliveries, the safe platelet count should be 50.000 /iL.

CONCLUSION

The young participants of thrombocytopenia were more prevalent than old age participants. The women with thrombocytopenia did not required lower segment

caesarean section procedure, most of the participants delivered babies with vaginal delivery method and most of the babies were not required intensive care.

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