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Original Research Article

Fetomaternal outcome of women with thrombocytopenia in labour

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ABSTRACT

Background: This study was conducted to study fetomaternal outcome in pregnancy with severity of thrombocytopenia.
Methods: It was a prospective observational study of fetomaternal outcome of women with thrombocytopenia admitted in labour room of a tertiary health care center of south Gujarat for 1-year period (April 2021-March 2022) after official approval from ethical committee. 100 consecutive consenting women with thrombocytopenia admitted in labour room of New Civil Hospital Surat were enrolled in this study.
Results: Mild thrombocytopenia was noted in 68% of the total cases, moderate thrombocytopenia in 27% and severe thrombocytopenia in 5% of cases. 59 subjects belong to age group of 20-25 years, 56 subjects were multipara, 70 subjects were registered antenatally, 68 subjects were delivered beyond 37 weeks of gestation. 48 subjects underwent LSCS and rest were delivered vaginally. 29 subjects had maternal complication. 95 subjects delivered alive baby of which 14 had NICU admission and 5 subjects had preterm still birth baby.
Conclusions: Thrombocytopenia is the second most common haematological finding in pregnancy next to anaemia. Majority of cases generally present at gestational age beyond thirty-seven weeks and belong to category of mild thrombocytopenia. Efforts should be made on improving antenatal registration, screening of maternal thrombocytopenia, early diagnosis and treatment.

Keywords: Fetal outcome, Maternal outcome, Thrombocytopenia

INTRODUCTION

Thrombocytopenia is a common occurrence in pregnancy. It is the second most common haematological finding in pregnancy next to anaemia. Thrombocytopenia affects 7-10% of all pregnancies.[1]

Thrombocytopenia is defined as a drop in platelet count below 150×10^9/l.[2] Most of this decrease occurs during the third trimester and is associated with a shift in the histogram of platelet count distribution.[3,4] There is a physiological fall in the platelet count with a leftward shift in platelet distribution. The cause for this decrease is multifactorial and is related to hemodilution, increased platelet consumption and increase in platelet aggregation driven by increased level of TXA2.[2,5,6]

Thrombocytopenia may result from a variety of causes, spectrum of benign conditions such as gestational thrombocytopenia to life threatening syndromes such as HELLP syndrome (hemolysis, elevated liver enzymes, low platelet count).[8,9] Gestational thrombocytopenia which accounts for 70-80% of all cases of thrombocytopenia in pregnancy is associated with less maternofoetal complications as compared to other etiological factors like pre-eclampsia, HELLP, ITP, TTP, HUS and DIC which exposes mother and child to potentially life threatening complications during pregnancy, delivery and puerperium.[10-13]

An accurate etiological diagnosis is essential for proper therapeutic management of these patients as thrombocytopenia during pregnancy is underexplored

condition in Indian women, so careful surveillance is required in these high-risk patients in order to ensure early detection and treatment of complications so as to decrease maternofoetal morbidities.

Our study was aimed at determining fetomaternal outcome in pregnancy with thrombocytopenia.

METHODS

It was an observational study conducted at the department of obstetrics and gynaecology, Government Medical College and New Civil Hospital, Surat for a period of one year (April 2021- March 2022) after HREC approval. A total of 100 consecutive consenting women with thrombocytopenia admitted in labour room of New Civil Hospital Surat were enrolled in this study.

Inclusion criteria

All consenting women with thrombocytopenia in labour room of NCHS were included.

Exclusion criteria

Non consenting patients in labour room with thrombocytopenia and patients with anomalous baby.

All data related to sociodemographic factors, clinical profile, maternal and fetal outcome, progression of labour, associated etiological factors and risk factors and complications were collected from case records of subjects in a structured proforma.

All women had platelet count estimation at the time of enrolment.

Investigations including CBC, LFT, RFT, peripheral blood smear, coagulation profile, detection of malaria on peripheral blood smear, dengue IgG and IgM antibodies were done as and when required. The diagnosis was inferred from the above investigations. Platelet count of 1,00,000/mm^3 to 1,50,000/mm^3 was classified as mild thrombocytopenia, 50,000/mm^3 to <1,00,000/mm^3 as moderate thrombocytopenia and <50,000/mm^3 as severe thrombocytopenia.

Management of subjects was done as per standard department protocol. All subjects were followed till discharge from hospital.

Data entry and statistical analysis was performed using SPSS software version 26.

RESULTS

Severity of thrombocytopenia

Of 100 subjects studied, the distribution of subjects as per severity is as follows:

Table 1: Distribution of subjects according to severity.

Severity of thrombocytopenia	No. of participants (n=100)
Mild (100000-150000/µl)	68
Moderate (50000-99000/µl)	27
Severe (<50000/µl)	5

Of the total 100 subjects studied, the maximum platelet count was 1,49,000/mm^3 and minimum of 24000/mm^3.

Socio-demographic parameters

Out of 100 subjects studied, the baseline details including age, parity, antenatal registration status and gestational age at delivery as per severity were noted. The results are depicted in Table 2.

Table 2: Baseline details.

Age (in years)	Mild	Moderate	Severe	n=100
<20	8	0	1	9
20-25	39	18	2	59
25-30	17	9	1	27
>30	4	0	1	5
Total	68	27	5	100
Parity				
Primipara	28	14	2	44
Multipara	40	13	3	56
Total	68	27	5	100
Antenatal registration status				
Registered	50	18	2	70
Referred	12	9	3	24
Emergency	6	0	0	6
Total	68	27	5	100
GA at delivery				
<34 weeks	5	1	2	8
34-37 weeks	13	10	1	24
>37 weeks	50	16	2	68
Total	68	27	5	100

Out of 68 subjects with mild thrombocytopenia, most of subjects belong to age group of 20-25 years of age (57%), were multipara (58%), were registered in their antenatal period (73%), and delivered at gestational age of >37 weeks of gestation (73%).

Out of 27 subjects with moderate thrombocytopenia, most of subjects belong to age group of 20-25 years (66%), were registered patients and delivered at gestational age beyond 37 weeks.

Out of 5 subjects with severe thrombocytopenia, 2 (40%) of them belong to age group of 20-25 years, 3 (60%) of the subjects were referred from peripheral centers while in terms of parity and gestational age of delivery there was almost equal distribution.

Mode of delivery

Mode of delivery in relation with severity of our subjects was analysed. The details are mentioned in Table 3.

The observations with respect to mode of delivery were as follows:

Out of 68 subjects with mild thrombocytopenia, 29% subjects were directly taken for LSCS for obstetric cause. Of rest 48 (71%) of subjects who were considered for vaginal delivery, 31 were allowed to go in spontaneous labour of which 26 delivered vaginally and 5 underwent LSCS. 17 subjects who had induction of labour, 13 of them delivered vaginally and 4 subjects underwent LSCS.

Table 3: Distribution of study subjects as per mode of delivery in relation with severity.

Mode of delivery			Mild	Moderate	Severe	N=100
Direct CS			20	9	4	33
Considered for vaginal delivery	spontaneous	Vaginal	26	9	0	35
		CS	5	3	0	8
	Induced	Vaginal	13	3	1	17
		CS	4	3	0	7
Total			68	27	5	100

Table 4: Distribution of subjects with maternal complication in terms of severity.

Maternal complication	Mild	Moderate	Severe	N=100
Complication	15 (22%)	11 (40%)	3 (60%)	29
No complication	53 (78%)	16 (60%)	2 (40%)	71
Total	68	27	5	100
Complication	**Mild**	**Moderate**	**Severe**	**N=29**
APH	5	2	0	7
Primary PPH	3	1	1	5
Bleeding from episiotomy site	5	4	1	10
Incision site ooze in CS	1	1	0	2
Wound hematoma	0	0	0	0
DIC	0	0	1	1
APH with PPH	1	0	0	1
APH with bleeding from episiotomy site	0	1	0	1
PPH with bleeding from episiotomy site	0	1	0	1
Wound hematoma with DIC	0	1	0	1
Total				29

Table 5: Distribution of subjects as per fetal outcome with severity.

Fetal outcome		Mild	Moderate	Severe	N=100
Full term live		57	22	2	81
Full term SB		0	0	0	0
Preterm Live		7	4	3	14
Preterm SB		4	1	0	5
Total		68	27	5	100
Neonatal outcome		**Mild**	**Moderate**	**Severe**	**N=95**
No NICU admission		60	19	2	81
NICU admission	Discharged home	3	3	3	9
	END	4	1	0	5
Total		67	23	5	95

Out of 27 subjects with moderate thrombocytopenia, 33% of subjects were directly taken for LSCS. Of rest 18 (67%) subjects who were considered for vaginal delivery, 12 were allowed to go in spontaneous labour of which 9 delivered vaginally and 3 underwent LSCS. 6 of subjects who had induction of labour, 3 of them delivered vaginally and 3 subjects underwent LSCS.

Out of 5 subjects who had severe thrombocytopenia, 4 (80%) of them were directly indicated for LSCS. 1 (20%) had induction of labour for premature rupture of membrane and delivered vaginally.

Maternal complications

Maternal complications as per severity was analysed and the details are mentioned in Table 4.

Of 29 subjects having complications, 7 subjects with antenatal complication have majority of subjects with mild thrombocytopenia 5 (i.e 71%) and rest 2 subjects (29%) with moderate thrombocytopenia.

Most common post-natal complication was bleeding from episiotomy site. 5 subjects (50%) had mild thrombocytopenia, 4 had moderate thrombocytopenia (40%), 1 (10%) had severe thrombocytopenia.

12 subjects out of 52 vaginal delivery (23%) had bleeding from episiotomy site.

2 subjects out of total 48 LSCS (4%) had incision site ooze.

1 subject (3%) with severe thrombocytopenia had DIC.

1 subject (3%) with moderate thrombocytopenia had wound hematoma with DIC.

Fetal outcome

Fetal outcome as per severity was studied and the results are depicted in Table 5.

Out of 100 subjects studied,95 had alive baby while 5 had preterm still birth baby. Out of 95 alive baby, 81 (85%) had no NICU admission. Out of 14 baby who had NICU admission, 9 of them were discharged and 5 had early neonatal death.

DISCUSSION

Majority of subjects in our present study had mild thrombocytopenia (68%) which is same for study by Asrie et al, 74% had mild thrombocytopenia and another study by Sumathy et al, 89.1% had mild thrombocytopenia.[14]

Asrie et al conducted a study in Ethiopia in 2014 in which majority of the subjects belong to age group of 26-30 (38.7%) years as compared to our present study in which majority of subjects belonged to 20-25 (59%) years of age.[14] However, in study by Patil et al, majority of subjects (55.8%) belong to age group of 20-25 years, same as our study.

Majority of subjects were multipara (56%) in our present study which is same for study by Asrie i.e. 65% subjects are multipara. However, in study by Patil et al, both the group has around equal distribution and in study by Sumathy et al 55.6% were primipara.[15,16]

In study conducted by Patil et al, majority of subjects (51.3%) were delivered beyond 37 weeks which is same as our present study.[15]

3 subjects out of 5 were referred which suggests that patients should be referred at an early stage for better management of severe thrombocytopenia.

Majority of subjects (48%) in our present study is delivered by LSCS whereas in study by Patil, majority of subjects had spontaneous normal delivery and in study by Sumathy et al, 48.9% underwent LSCS which is comparable to our study.[16]

In our present study, 7 subjects had APH and 5 subjects had PPH and 2 with incision site ooze and 1 with DIC. In study conducted by Sumathy et al, atonic PPH occurred in 13 patients (7.1.%), abruption in 5 patients (2.7%), DIC in 4 patients (2.1%) and incisional site oozing in 1 patient (0.5%).[16]

In our present study 81% subjects gave birth to full term live baby, 14% to preterm live baby and 5% had preterm Still birth baby. In study by Sumathy et al, 88.1% gave birth to live baby and 3.8% had IUD.[16]

Limitation our present study was that sample size was less and COVID-19 pandemic affected number of patients opting for delivery at our institute as it was designated COVID-19 hospital.

CONCLUSION

Thrombocytopenia is a common occurrence in pregnancy these days. Majority of cases generally present at gestational age beyond thirty-seven weeks and belong to category of mild thrombocytopenia.

Gestational thrombocytopenia is usually not associated with serious feto-maternal complications. However, efforts must be made to optimise maternal nutrition pre-conceptionally, improving antenatal registration of expectant mothers, screening for maternal thrombocytopenia with appropriate evaluation in high risk subjects and birth micro-planning for these high risk pregnancies.

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