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ORIGINAL RESEARCH ARTICLE

A prospective, observational study to evaluate fetal & maternal outcome in thrombocytopenia with pregnancy at a tertiary care centre

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Abstract

Background: Thrombocytopenia develops in 5% to 10% of women during pregnancy or in the immediate postpartum period. A low platelet count is often an incidental feature of pregnancy, but it might also provide a biomarker of a coexisting systemic or gestational disorder and a potential reason for a maternal intervention or treatment that might pose harm to the fetus. Maternal thrombocytopenia is commonly diagnosed during routine prenatal complete blood count. ***Aims:*** To determine various etiologies of thrombocytopenia in pregnancy ***and*** to study fetal outcome & maternal outcome of thrombocytopenia in pregnancy. ***Material and Methods:*** This study was a Prospective Observational Study conducted in the Department of Gynecology & Obstetrics, NRSMC&H & Department of Haematology, NRSMC&H Kolkata, West Bengal, India from April 2019 to March 2020. 100 Pregnant women with thrombocytopenia attending ANC clinic & Haematology OPD were included in the study. A suitable predesigned pretested Proforma for data collection was used. Template was generated in MS excel sheet and analysis

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was done on SPSS software. ***Result:*** In the present study 23(23.0%) patients were ≤20 years old, 75(75.0%) patients were 21-30 years old Pre-term delivery (69%) is significantly higher than subjects with no Pre-term delivery (20%). 31(31.0%) patients had SNCU admission, 7(7.0%) patients had neonatal thrombocytopenia, 13(13.0%) patients had IUD, 28(28.0%) patients had LBW, 11(11.0%) patients had Spontaneous miscarriage, 26(26.0%) patients had FGR. In ITP Group, 9 (25.0%) patients had preterm delivery. In PPH Group, 3(8.1%) patients were had Preclamsia. A significant higher proportion of patients had been given spinal anaesthesia (76.92%) followed by epidural anaesthesia (23.08%). ***Conclusion:*** It was found that 7 (7.0%) patients had neonatal thrombocytopenia and 50 (50%) patients had gestational thrombocytopenia. From this study, conclusion can be made that, platelet count may not be included in routine antenatal investigations.

Keywords: Fetal outcome, maternal outcome, pregnancy, thrombocytopenia

INTRODUCTION

Thrombocytopenia complicates 7-8% of all pregnancies, most of which is seen in the third trimester of pregnancy. Maternal thrombocytopenia is commonly diagnosed during routine prenatal complete blood count. Obstetricians need to rule out pathological causes of thrombocytopenia by judicious use of investigative modalities, so that unforeseen fetomaternal complications can be predicted and managed.

There is a dearth of literature on the fetomaternal outcome in pregnant women with severe thrombocytopenia especially from Indian subcontinent.

The platelet count in pregnancy is slightly lower than in non-pregnant women 10. Most studies report a reduction in platelet count during pregnancy, resulting in levels about 10% lower than pre-pregnancy level at term. The majority of women still have levels within the normal range; however, if pre-pregnancy levels are border-line, or there is a more severe reduction, the level may fall below the normal range. The mechanisms for this are thought to be dilutional effects and accelerated destruction of platelets passing over the often scarred and damaged trophoblast surface of the placenta.[1] Platelet counts may also be lower in women with twin compared with singleton pregnancies, possibly related to greater increase of thrombin generation.

Thrombocytopenia is a common finding in pregnancy, occurring in 7–10% pregnancies. It may be a diagnostic and management problem, and has many causes, some of which are specific to pregnancy.

Women with low platelet counts in pregnancy are generally less symptomatic due to the procoagulant state induced by increased levels of fibrinogen, factor VIII and von Will brand Factor (VWF), suppressed fibrinolysis and reduced protein S activity.[2]

Although most cases of thrombocytopenia in pregnancy are mild, with no adverse outcome for mother or baby, occasionally a low platelet count may be part of a complex disorder with significant morbidity and may (rarely) be life-threatening.

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Overall, about 75% of cases are due to gestational thrombocytopenia; 15–20% secondary to hypertensive disorders; 3–4% due to an immune process, and the remaining 1–2% made up of rare constitutional thrombocytopenias, infections and malignancies.[3]

Differentiating gestational thrombocytopenia from immune thrombocytopenia during pregnancy is clinically relevant, because pregnancies in women with immune thrombocytopenia may be complicated by severe neonatal thrombocytopenia, with a risk of neonatal intracranial hemorrhage.[4,5]

So, this study will enlighten us for requirement of early screening of thrombocytopenia in pregnancy and thus combating the serious life threatening complications associated with this.

MATERIAL AND METHODS:

Study design : Prospective observational study.

Study setting: Department of Gynecology & Obstetrics, NRSMC&H & Department of Haematology, NRSMC&H. 100 pregnant women, irrespective of all gestational age with platelet count <1.5 lacs/cu mm was taken in study

Period of study: Period of 1 year, from April 2019-March 2020

Study population : Pregnant women with thrombocytopenia attending ANC clinic & Haematology OPD, irrespective of all gestational age with platelet count <1.5 lacs/cu mm was taken in study.

Inclusion Criteria: Cases of Gestational thrombocytopenia, Preeclampsia with HELLP syndrome, Pregnancy with chronic ITP, HUS, TTP was included in the study.

Exclusion criteria : Cases to be excluded from the study are Drug induced thrombocytopenia, other malignancy, dengue, malaria, septicemia, secondary SLE and Other Auto immune disorders.

Study variables: Background variables Maternal age, obstetric history, drug history, platelet count**.**

Outcome variables: Haematoma**,** PPH, neonatal details **.**

Study parameters: 1 Age 2. Parity 3 gestational age 4. Complaints 5. Biochemical CBC, LFT, RFT Serology. PT, aPTT, FDP, fibrinogen, dengue, IgG, lgM, MPDA **.**

Study tool: 1.Case record form 2.Biochemical markers **.**

Study technique: 1.Case selection 2.Informed consent was taken from subjects 3.History taking with investigation **.**

Statistical Analysis: For statistical analysis data were entered into a Microsoft excel spreadsheet and then analyzed by SPSS (version 27.0; SPSS Inc., Chicago, IL, USA) and GraphPad Prism version 5. Data had been summarized as mean and standard deviation for numerical variables and count and percentages for categorical variables. Two-sample t-tests for a difference in mean involved independent samples or unpaired samples. Paired t-tests were a form of blocking and had greater power than unpaired tests. One-way analysis of variance (one-way ANOVA) was a technique used to compare means of three or more samples for numerical data (using the F distribution). A chi-squared test ($\chi 2$ test) was any statistical hypothesis test wherein the sampling

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distribution of the test statistic is a chi-squared distribution when the null hypothesis is true. Without other qualification, 'chi-squared test' often is used as short for Pearson's chi-squared test. Unpaired proportions were compared by Chi-square test or Fischer‘s exact test, as appropriate. p-value ≤ 0.05 was considered for statistically significant.

Ethical clearance: The study was conducted only after obtaining written approval from the Institutional Ethics Committee. Written informed consent was taken from every study patient.

RESULT:

The present Prospective observational study was planned to determine various etiologies of thrombocytopenia in pregnancy and to study fetal outcome & maternal outcome of thrombocytopenia in pregnancy. Total 100 pregnant women, irrespective of all gestational age with platelet count <1.5 lacs/cu mm was taken in study. The time period for the study was 1 year, from April 2019-March 2020. In all the cases, thorough history taking and clinical examination was done after taking proper consent. Data thus obtained was noted in the Proforma. Results thus obtained were analysed and expressed in tables.

Table 1: Distribution according to age, drug history, Distribution of ITP, Mode of delivery, PPH, Haematoma, Instrumental delivery, blood transfusion and PLT transfusion.

Age in Years	**Frequency**	**Percent**	
≤20	23	23.0%	
21-30	75	75.0%	
>31	2	2.0%	
Total	100	100.0%	
drug history			
No	64	64.0%	
Yes	36	36.0%	
ITP			
No	64	64.0%	
Yes	36	36.0%	
Mode of delivery			
LUCS	39	43.82%	
VD	50	56.18.0%	
PPH			
Yes	37	41.57	chi-square value=1.49
No	52	58.43	p-value= 0.601
Haematoma			

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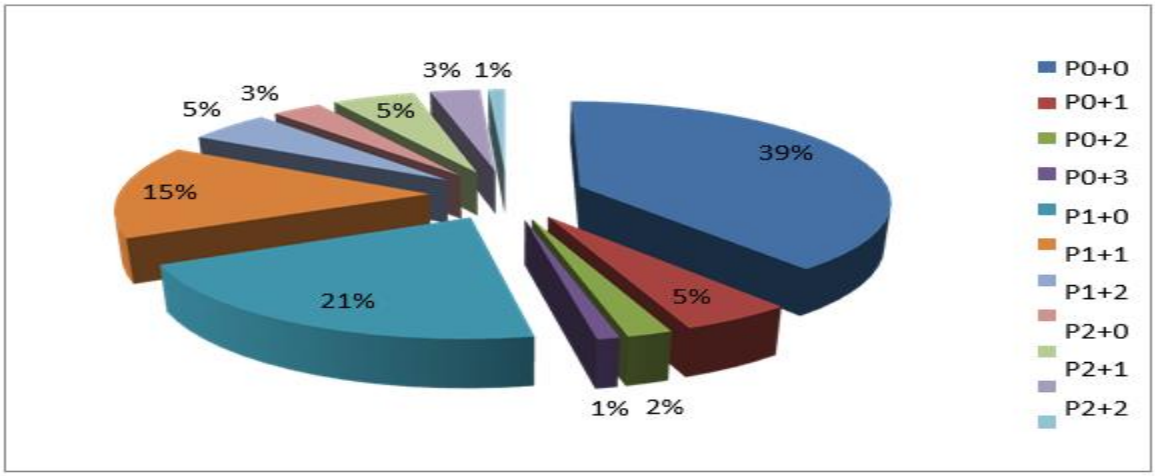
Yes	15	16.85	chi-square value=10.09 p-value< 0.001
No	74	83.15	
Instrumental delivery			
Yes	21	23.6	Chi-square value=9.89 p-value< 0.001
No	68	76.4	
blood transfusion			
No	59	59.0%	
Yes	41	41.0%	
PLT transfusion			
No	71	71.0%	
Yes	29	29.0%	

In the present study 23(23.0%) patients were ≤20 years old, 75(75.0%) patients were 21-30 years old and 2(2.0%) patient were >31years old. 36(36.0%) patients had drug history, 36(36.0%) patients had ITP, 39(39.0%) patients had LUCS and 61(61.0%) patients had VD. The proportion of subjects with PPH (41.57%) is non-significantly lower than subjects with no PPH (58.44%) with a chi-square value=1.49 and a p-value= 0.601 as computed by chi-square test for equal distribution. The proportion of subjects with haematoma (15%) is significantly lower than subjects with no haematoma (74%) with a chi-square value=10.09 and a p-value< 0.001 as computed by chi-square test for equal distribution. The proportion of subjects with no instrumental delivery (68%) is significantly higher than subjects requiring instrumental delivery (21%) with a chi- square value=9.89 and a p-value< 0.001 as computed by chi-square test for equal distribution. 41(41.0%) patients had blood transfusion, 29(29.0%) patients had PLT transfusion. (table 1)

Figure 1 : Distribution of PARITY



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From the above figure we conclude 39(39.0%) patients had P0+0, 5(5.0%) patients had P0+1, 2(2.0%) patients had P0+2, 1(1.0%) patients had P0+3, 21(21.0%) patients had P1+0, 15(15.0%) patients had P1+1, 5(5.0%) patients had P1+2, 3(3.0%) patients had P2+0, 5(5.0%) patients had P2+1, 3(3.0%) patients were P2+2 and 1(1.0%) patient had P3+1. (Figure 1)

Table 2: Distribution of preterm delivery, birth asphyxia, IOL, SNCU admission, neonatal thrombocytopenia, IUD, LBW, Spontaneous miscarriage, FGR,

Preterm delivery	**Frequency**	**Percent**	
Yes	69	77.53	**chi-square value=9.76 p-value< 0.001**
No	20	22.47	
birth asphyxia			
No	83	83.0	
Yes	17	17.0	
IOL			
No	49	49.0	
Yes	51	51.0	
SNCU admission			
No	69	69.0	
Yes	31	31.0	
Neonatal thrombocytopenia			
No	93	93.0	
Yes	7	7.0	
IUD			
No	87	87.0	
Yes	13	13.0	
LBW			
No	72	72.0	
Yes	28	28.0	
Spontaneous miscarriage			
no	89	89.0	
Yes	11	11.0	
FGR			
No	74	74.0	
Yes	26	26.0	

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The proportion of subjects with Pre-term delivery (69%) is significantly higher than subjects with no Pre-term delivery (20%) with a chi-square value=9.76 and a p-value< 0.001 as computed by chi-square test for equal distribution, 17(17.0%) patients had birth asphyxia, 51(51.0%) patients had IOL, 31(31.0%) patients had SNCU admission, 7(7.0%) patients had neonatal thrombocytopenia, 13(13.0%) patients had IUD, 28(28.0%) patients had LBW, 11(11.0%) patients had Spontaneous miscarriage, 26(26.0%) patients had FGR. (Table 2)

Table 3: Distribution of mean AGE, Gestational age, platelet count,

	Number	Mean	SD	Minimum	Maximum	Median
Age	100	22.8600	3.0584	18.0000	32.0000	22.0000
Gestational age	100	30.0700	8.5991	6.0000	41.0000	33.0000
Platelet count	77	70571.4286	22660.7872	20000.0000	99000.0000	75000.0000

In above table showed that the mean AGE (mean± s.d.) of patients was 22.8600± 3.0584. Mean Gestational age (mean± s.d.) of patients was 30.0700± 8.5991. Mean platelet count (mean± s.d.) of patients was 70571.4286± 22660.7872. (Table 3)

Table 4: Association between Age in Years: ITP

	ITP		
Age in Years	**No**	**Yes**	**Total**
≤20	17	6	23
Row %	73.9	26.1	100.0
Col %	26.6	16.7	23.0
21-30	46	29	75
Row %	61.3	38.7	100.0
Col %	71.9	80.6	75.0
>31	1	1	2
Row %	50.0	50.0	100.0
Col %	1.6	2.8	2.0
Total	64	36	100
Row %	64.0	36.0	100.0
Col %	100.0	100.0	100.0

Chi-square value: 1.3826; p-value: 0.5009

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In ITP Group, 6(16.7%) patients were 1 years old, 29(80.6%) patients were 1 years old and 1(2.8%) patients were 3 years old. Association of Age in years vs ITP was not statistically significant (p=0.5009). (Table 4)

Table 5: Association between preterm delivery: ITP

	ITP		
preterm delivery	**No**	**Yes**	**Total**
No	53	27	80
Row %	66.3	33.8	100.0
Col %	82.8	75.0	80.0
Yes	11	9	20
Row %	55.0	45.0	100.0
Col %	17.2	25.0	20.0
Total	64	36	100
Row %	64.0	36.0	100.0
Col %	100.0	100.0	100.0

Chi-square value: 0.8789; **p-value:** 0.3485

Odds Ratio: 1.6061 (0.5936, 4.3457)

In ITP Group, 9 (25.0%) patients had preterm delivery. Association of preterm delivery vs ITP was not statistically significant (p=0.3485). (Table 5)

Table 6: Association between Spontaneous miscarriage: ITP

	ITP		
Spontaneous miscarriage	**No**	**Yes**	**Total**
no	63	26	89
Row %	70.8	29.2	100.0
Col %	98.4	72.2	89.0
yes	1	10	11
Row %	9.1	90.9	100.0
Col %	1.6	27.8	11.0
Total	64	36	100
Row %	64.0	36.0	100.0
Col %	100.0	100.0	100.0

Chi-square value: 16.1737; **p-value:** <0.0001

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Odds Ratio: 24.2308 (2.9500, 199.0282)

In ITP Group, 10(27.8%) patients had Spontaneous miscarriage. Association of Spontaneous miscarriage vs ITP was statistically significant (p<0.0001). (Table 6)

Table 7: Association between Pre-eclampsia vs PPH

	PPH		
Preclamsia	**No**	**Yes**	**Total**
No	52	34	86
Row %	60.5	39.5	100.0
Col %	82.5	91.9	86.0
Yes	11	3	14
Row %	78.6	21.4	100.0
Col %	17.5	8.1	14.0
Total	63	37	100
Row %	63.0	37.0	100.0
Col %	100.0	100.0	100.0

Chi-square value: 1.6933; **p-value:** 0.1931

Odds Ratio: 0.4171 (0.1084, 1.6055)

In PPH Group, 3(8.1%) patients were had Preclamsia. Association of Preclamsia vs PPH was not statistically significant (p=0.1931). (Table 7)

Table 8: Association between Gestational Thrombocytopenia : PPH

	PPH		
Gestational Thrombocytopenia	**No**	**Yes**	**Total**
No	32	18	50
Row %	64.0	36.0	100.0
Col %	50.8	48.6	50.0
Yes	31	19	50
Row %	62.0	38.0	100.0
Col %	49.2	51.4	50.0
Total	63	37	100
Row %	63.0	37.0	100.0
Col %	100.0	100.0	100.0

Chi-square value: 0.0429; **p-value:** 0.8359

Odds Ratio: 1.0896 (0.4837, 2.4546)

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In PPH Group, 19(51.4%) patients were had Gestational Thrombocytopenia. Association of Gestational Thrombocytopenia vs PPH was not statistically significant (p=0.8359). (Table 8)

Table 9: Distribution of mode of anaesthesia in LUCS patients

Mode of anaesthesia	Frequency	Percentage
Spinal anaesthesia	30	76.92
Epidural anaesthesia	9	23.08
Total	39	100.0

p<0.05 considered as statistically significant

A significant higher proportion of patients had been given spinal anaesthesia (76.92%) followed by epidural anaesthesia (23.08%) with a chi-square value=8.08 and with a p-value= 0.042 as computed by chi-square test for equal distribution. (Table 9)

Table 10: Distribution of mean AGE: ITP, mean gestational age: ITP, mean platelet count: ITP

		No.	Mean	SD	Minimum	Maximum	Median	p-value
Age	No	64	22.6250	2.9894	18.0000	32.0000	22.0000	0.3080
	Yes	36	23.2778	3.1768	18.0000	32.0000	23.0000	
Gestational age	No	64	33.6406	6.2064	6.0000	41.0000	36.0000	<0.0001
	Yes	36	23.7222	8.6639	8.0000	36.0000	23.0000	
Platelet count	No	42	83023.8095	13635.4776	46000.0000	99000.0000	89000.0000	<0.0001
	Yes	35	55628.5714	22410.7192	20000.0000	98000.0000	50000.0000	

In ITP, the mean Age (mean± s.d.) of patients was 23.2778± 3.1768. Difference of mean Age with both ITP was not statistically significant (p=0.3080). In ITP, the mean Gestational age (mean± s.d.) of patients was 23.7222± 8.6639. Difference of mean Gestational age with both ITP was statistically significant (p<0.0001). In ITP, the mean platelet count (mean± s.d.) of patients was 55628.5714± 22410.7192. Difference of mean platelet count with both ITP was statistically significant (p<0.0001). (Table 10)

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DISCUSSION:

our study, 23(23.0%) patients were ≤20 years old, 75 (75.0%) patients were 21-30 years oldand 2 (2.0%) patient were >31years old. In our study, 39 (39.0%) patients had P0+0, 5 (5.0%) patients had P0+1, 2 (2.0%) patients had P0+2, 1 (1.0%) patients had P0+3, 21(21.0%) patients had P1+0, 15 (15.0%) patients had P1+1, 5(5.0%) patients had P1+2, 3 (3.0%) patients had P2+0, 5(5.0%) patients had P2+1, 3(3.0%) patients were P2+2 and 1(1.0%) patient had P3+1. In our study, 36 (36.0%) patients had drug history. In our study, 36 (36.0%) patients had ITP,50% had gestational thrombocytopenia and 14% had pre-eclampsia. No caseof HUS and TTP was found. Out of all patients, 23% mothers had mild thrombocytopenia, 60% moderate thrombocytopenia and 17% had severe thrombocytopenia. In our study, 39% mothers were primigravida, 61% mothers were multigravida.

In our study, 39 (39.0%) patients had LUCS and 61 (61.0%) patients had VD. In all LUCS patients 25.64% were due to fetal distress,23.08% were due to induction failure,10.26% were due to placenta praevia,12.82% were due to malpresentation. In all LUCS mothers, 76.92% were done under spinal anaesthesia, 23.08% were done under epidural anaesthesia. In our study, 37 (41.57%) patients had PPH. In our study, PPH is found higher incidence in multigravida mothers (45.9%), than primigravida mothers (23.1%). PPH also found higher in LUCS patients (41%) than VD(34.4%). In our study, 15(16.85%) patients had Haematoma.In our study, 21(23.65%) patients had Instrumental delivery. In our study, 41(41.0%) patients had blood transfusion. In our study, 29(29.0%) patients had PLT transfusion. In our study, 69(77.53%) patients had preterm delivery. In our study, 17(17.0%) patients had birth asphyxia. In our study, 51(51.0%) patients had IOL. In our study, 31(31.0%) patients had SNCU admission. In our study, 7(7.0%) patients had neonatal thrombocytopenia. In our study, 13(13.0%) patients had IUD. In our study, 28(28.0%) patients had LBW. In our study 11(11.0%) patients had Spontaneous miscarriage. In our study, 26(26.0%) patients had FGR. In above table showed that the mean AGE (mean± s.d.) of patients was 22.8600± 3.0584. In above table showed that the mean Gestational age (mean± s.d.) of patients was 30.0700± 8.5991.

Ciobanu AM et al (2016)[6] found that gestational thrombocytopenia explains 70-80% of all cases of thrombocytopenia in pregnancy.

Dwivedi P et al (2012)[7] found that Ninety-four subjects (8.17%) were found to have thrombocytopenia i.e. platelet count < 1,50,/000/mm3, out of which 47 subjects (group A) had platelet count of less than 50.000/mm3 Simultaneously, 47 term pregnant women (group B) having a normal platelet count i.e. > 1.5 lac/mm3 formed the control group. Abruptio placentae and early onset pregnancy induced hypertension (PIH) in previous gestations was more commonly found in the study population.

Anita H et al (2016)[8] found that maternal morbidity and mortality was seen only in medical and obstetric thrombocytopenia. The low platelet counts and declining trend with increasing gestational age predispose.

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Reddy MG et al (2014)[9] found that total primigravida 61.5% and multigravida, 38.5% of this 55.9% delivered by LSCS and 45.24% delivered vaginally. Term babies were 44, preterm were 15 and 50.8% were male and 49.2% were female.

In ITP Group, 36(100.0%) patients had drug history. Association of drug history vs ITP was statistically significant (p<0.0001). In ITP Group, 11(30.6%) patients had LUCS and 25(69.4%) patients had VD. Al-Husban N et al (2020)[10] found that the prevalence of thrombocytopenia in pregnant women was 7.20%.

Myers B et al (2012)[11] found that thrombocytopenia is a common finding in pregnancy, occurring in approximately 7–10% of pregnancies. Hussein EA et al (2014)[12] found that thrombocytopenia (platelet count <150 × 109 /L) occurred in 22 pregnancies. Eleven (37%) had vaginal delivery and 19 (63%) underwent elective cesarean section.

Wyszynski DF et al (2016)[13] found that among 446 pregnancies in women with ITP, 346 resulted in live births. Women with cITP experienced more adverse outcomes than those with a pregnancy-related diagnosis of ITP. Lin YH et al (2013)[14] found that 787 pregnancies (4.3%) were complicated by thrombocytopenia.

Changede P et al (2019)[15] found that fifty-three percentage of cases were referred or transferred from periphery hospitals. Complications like disseminated intravenous coagulopathy, postpartum haemorrhage, hepatic encephalopathy and hepatoportal hypertension were seen in 65% of case

Shinde NR et al (2014)[16] found that 67.3% (35/52) survived and 32% (17/52) cases died. In pregnant group, nearly 90% (40/44) patients survived and only 9% (4/44) patients died.

Suresh I et al (2017)[17] found that pre-eclampsia (57%), eclampsia (19%), HELLP syndrome (8%), viral infection (6%), hyperemesis gravidarum (5%), intrahepatic cholestasis of pregnancy (4%), chronic liver disease (1%) and sepsis were encountered. There were 41 fetal deaths, 42% preterm deliveries, and NICU admission rate was 27%. Five maternal deaths occurred. Maternal anemia, thrombocytopenia, hyperbilirubinemia and coagulopathy were statistically significant in adverse fetal outcomes.

Elveđi-Gašparović V et al (2016)[18] found that neonatal thrombocytopenia occurred more often in pregnancies complicated with gestational thrombocytopenia (p = 0.041). Thrombocytopenia in previous pregnancy seems to be an important predicting factor for disease severity in the current pregnancy (p = 0.01). Azami M et al (2017)[19] found that the overall prevalence of TCP among pregnant women based on the random effects model was 8.4% (95% confidence interval: 6.9%–10.1%). The lowest TCP prevalence was 4.3% in Taiwan, while the highest prevalence was 15.3% in Ghana. Nisha S et al (2012)[20] found that eighteen mothers had platelets between 20-50,000 and out of these 9 mothers and 11 neonates died. Nineteen mothers had platelets between 50-100,000 and out of these one mother and 3 neonates died.

Cases with ITP with pregnancy was diagnosed at average 20 weeks gestational age. Known case of ITP, who are referred from department of Haematology, NRSMC&H were diagnosed at quite early trimester & treated as well. Pre-eclampsia patients were diagnosed at average

33 weeks gestational age in our study. Cases of Gestational thrombocytopenia were diagnosed mostly in mid to last third trimester, with average gestational age being at 36 weeks POG

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CONCLUSION:

In our study, 36(36.0%) patients had ITP, 37(41.57%) patients had PPH, 15(16.85%) patients had Haematoma, 41(41%) patients had blood transfusion, 29(29.0%) patients had PLT transfusion and 51(51.0%) patients had IOL. We found that drug history was significantly associated with ITP. Blood transfusion was required more in ITP patients though it was not statistically significant. It was found that mode of delivery, PPH, Haematoma, preterm delivery, birth asphyxia, IOL, SNCU admission, IUD, LBW and FGR was not significantly associated with ITP. Spontaneous miscarriage was significantly associated with ITP. Most of the complications are found significantly higher in ITP group of mothers. Most of these ITP cases are already diagnosed and referred cases from Department of Haematology, NRSMC&H. Comparatively, thrombocytopenia cases which are diagnosed by routine ANC check-ups & investigations resulted less complications. From this study, conclusion can be made that, platelet count may not be included in routine antenatal investigations

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Conflict of interest: None declared

Ethical approval: The study was approved by the institutional ethics committee

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