



Original Research Article

Maternal and fetal outcome of pregnancies complicated with thrombocytopenia

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ABSTRACT

Thrombocytopenia is defined as a platelet count below the lower limit of normal range (typically < 150,000/microL). It is second only to anemia as the most common hematological abnormality encountered during pregnancy. Thrombocytopenia complicates about 7-8% of all pregnancies, especially in third trimester; it most frequently represents a complication not requiring treatment. Evaluation and management of thrombocytopenia during pregnancy and postpartum may be challenging because there are many potential causes, some directly related to pregnancy and some unrelated. For many causes there are no diagnostic laboratory tests.

This topic reviews our approaches to determining causes of thrombocytopenia in a pregnant women and its impact on newborns while looking to stratify the risk according to etiology and severity of parturient's hematological condition.

In our study Gestational thrombocytopenia was the commonest cause of thrombocytopenia with incidence of 70%, followed by Preeclampsia (22%), HELLP (4%), ITP (2%) and Dengue (2%).

Gestational thrombocytopenia is the commonest cause of thrombocytopenia and may not be related to adverse pregnancy outcome, thus can be treated as benign condition. Clinical assessment is most important factor for evaluating a patient with thrombocytopenia.

Monitoring of platelet count of pregnant women should be a routine at antenatal visits for timely diagnosis and to achieve favorable fetomaternal outcome in all types of thrombocytopenia. Neonatal platelet count should be done in all mothers diagnosed with thrombocytopenia.

After detailed evaluation of the data, we came to the conclusion that with proper care and precautions, readiness to deal with complications, thrombocytopenia does not pose significant impact on maternal and fetal morbidity and mortality when compared to normal population.

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1. Introduction

Thrombocytopenia is defined as a platelet count below the lower limit of normal range (typically < 150,000/microL).¹ It is second only to anemia as the most common hematological abnormality encountered during pregnancy. Thrombocytopenia complicates about 7-8% of all pregnancies, especially in third trimester; it most frequently represents a complication not requiring treatment.² Evaluation and management of thrombocytopenia during

pregnancy and postpartum may be challenging because there are many potential causes, some directly related to pregnancy and some unrelated. For many causes there are no diagnostic laboratory tests.

This topic reviews our approaches to determining causes of thrombocytopenia in a pregnant women and its impact on newborns while looking to stratify the risk according to etiology and severity of parturient's hematological condition.

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2. Aims and Objectives

To assess the maternal and fetal outcomes among women presenting with thrombocytopenia.

3. Materials and Methods

3.1. Type of study

Prospective observational study.

3.2. Study setting

Department of Obstetrics and Gynaecology at Shri Vasantao Naik Government College, Yavatmal, Maharashtra, India.

3.3. Study population

All consenting women delivered at Shri Vasantao Naik Government Medical College Yavatmal.

3.4. Study duration

6 Months (July 2019 to December 2019).

We conducted the prospective study of 1470 pregnant woman admitted consecutively during a six-month period. Out of this 100 were diagnosed with thrombocytopenia. The causes of thrombocytopenia were studied. Maternal outcomes such as mode of delivery, any postpartum haemorrhage, number of blood and blood products transfusions given were recorded. Also neonatal outcomes regarding NICU admission and platelet count in neonate were studied.

Study group comprised pregnant woman with platelet count below 150000.

For comparison, we used to control lot- patients with uncomplicated pregnancies and without thrombocytopenia.

Diagnosis of thrombocytopenia what is established using criteria from international consensus. pre-eclampsia was identified as elevated BP 140 /90 mm Hg and proteinuria (> 300mg/ 24 hr) after 20 weeks of pregnancy. HELLP syndrome was diagnosed in the presence of hemolysis, elevated liver enzyme levels and low platelet count.

3.5. Statistical analysis

Standard statistic methods were used for analysing the data.

4. Results and Conclusions

At delivery, the distribution of platelet count in womens with uncomplicated singleton pregnancy was as follows:

1. 100 out of 1470 women had platelet count less than 150,000/ microL, which is 6.8%.
2. Mild thrombocytopenia (150,000- 100,000) - 50%.
3. Moderate thrombocytopenia (50,000- 100,000) - 36%.

4. Severe thrombocytopenia (less than 50,000) - 14%.

4.1. Causes

1. Gestational hypertension is the most common cause accounting for 70%.
2. Preeclampsia 22%.
3. HELLP 4%.
4. ITP 2%.
5. Dengue 2%.

4.2. Maternal outcomes

Table 1:

Mode of delivery	Cases	Controls
Vaginal delivery	74	119
Cesarean section	26	251

Value is 0.078 in (insignificant)

Table 2:

Blood requirement	Cases	Control
Needed	20	192
Not needed	80	1178

Value is 0.134 (insignificant)

Table 3:

Postpartum Hemorrhage	Cases	Control
Yes	12	92
No	88	1278

Value is 0.07 (insignificant) There is no increase in PPH due to thrombocytopenia

4.3. Neonatal outcomes

Table 4:

NICU Admissions	Cases	Controls
Baby admitted	10	73
Healthy	90	1297

Value is 0.08 (insignificant)

8% neonates are admitted due to jaundice and 2% due to fetal distress in study group.

Table 5: Neonates affected with thrombocytopenia

	Cases	Controls
Thrombocytopenia	2	7
Normal platelet count	98	1363

P value is 0.065 (insignificant)

5. Discussion

This study's objective was to determine the relationship between maternal thrombocytopenia and neonatal complications. We look for associations between the severity of the hematological condition, as well as its etiology.

Most cases of low platelet count were mild (50%). As expected these patients were not at risk of either neonatal conditions. The maternal blood test showed no supplementary abnormalities (except for lower platelet count); no maternal clinical complications were noted.

We encountered 36% cases of moderate thrombocytopenia and 14% cases of severe thrombocytopenia. Parnas et al. observed that patients with moderate to severe thrombocytopenia have higher rates of preterm deliveries (<37 week), with a RR of 3.5.³ Kam et al. also associated thrombocytopenia complicating pregnancy with adverse neonatal outcome.⁴

Regarding etiology, gestational thrombocytopenia had the higher incidence (70%). However, just as other studies have proved,⁵ this condition was not associated with pregnancy-related complications.

Preeclampsia accounted for 22% cases. Recent studies proved that hypertensive disorders of pregnancy are associated with increased risk of maternal-perinatal adverse outcome.^{6–8} HELLP syndrome is another factor that the literature incriminates for increased neonatal mortality and morbidity.^{9,10} For patients with HELLP syndrome, Kändler et al. found with a mean age of birth of 33 weeks and a mean birth weight of 1671 g and Ben Letaifa et al. reported a mean age of 32.4 weeks and a mean weight of 1250 g.¹¹

In our study 74 subjects had delivered by LSCS and 26 patients delivered vaginally which was similar to study by Singh et al (LSCS 36% and FTND 64%) and Vyas et al. (LSCS 37% and FTND 63%) and Ruggri et al. (LSCS 20% and FTND 80%).^{12,13} In the present study 20 patients required blood transfusion. However the need of blood transfusion was higher in the studies by Paranas et al. (16.60%), Borna et al. (26.20%), Yuce et al. (10%) and Dwivedi et al. (9%).¹⁴

In our study 10 neonates required NICU admissions, among which 8% was due to neonatal jaundice and 2% due to fetal distress. In the study conducted by Vyas et al. 13.02% neonates were admitted to NICU.¹⁵

In the present study, only 2 neonates had fetal thrombocytopenia, while in the study by Singh et al. incidence was 1.09% which was similar to our study.¹³ Also, in our study only 12 patients had PPH.

6. Conclusion

In our study Gestational thrombocytopenia was the commonest cause of thrombocytopenia with incidence of 70%, followed by Preeclampsia (22%), HELLP (4%), ITP

(2%) and Dengue (2%).

Gestational thrombocytopenia is the commonest cause of thrombocytopenia and may not be related to adverse pregnancy outcome, thus can be treated as benign condition. Clinical assessment is most important factor for evaluating a patient with thrombocytopenia.

Monitoring of platelet count of pregnant women should be a routine at antenatal visits for timely diagnosis and to achieve favorable fetomaternal outcome in all types of thrombocytopenia. Neonatal platelet count should be done in all mothers diagnosed with thrombocytopenia.

After detailed evaluation of the data, we came to the conclusion that with proper care and precautions, readiness to deal with complications, thrombocytopenia does not pose significant impact on maternal and fetal morbidity and mortality when compared to normal population.

7. Source of Funding

None.

8. Conflict of Interest

None.

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