

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

Monica Arora¹, Lajja Goyal², Himanshu Khutan³

¹Assistant Professor, Department of Medicine, Guru Gobind Singh Medical College, Faridkot, Punjab - 151203.

²Professor, Department of Obstetrics & Gynaecology, Guru Gobind Singh Medical College, Faridkot, Punjab - 151203.

³Senior Resident, Department of Medicine, Guru Gobind Singh Medical College, Faridkot, Punjab - 151203.

Received: December 2016

Accepted: December 2016

Copyright: © the author(s), publisher. Annals of International Medical and Dental Research (AIMDR) is an Official Publication of "Society for Health Care & Research Development". It is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: To study the Prevalence of thrombocytopenia during pregnancy and its effect on pregnancy and neonatal outcome. **Methods:** It was a prospective one year study of pregnancy with thrombocytopenia. The cause of thrombocytopenia and feto-maternal outcomes in pregnancy with thrombocytopenia was studied. **Results:** Among 1450 deliveries, total 137 women were having thrombocytopenia in third trimester. The commonest etiology was gestational thrombocytopenia (61%). Thrombocytopenia due to severe preeclampsia and HELLP syndrome in this study was 24%, Placental abruption 9(6.6%), PPH 6(4.3%), Wound hematoma 5(3.6%) were noted. Fetal complications – stillbirth 11(8%), low birth weight 14(10.21%), low APGAR 22(16.2%) and neonatal thrombocytopenia 6(4.3%). Thrombocytopenia in pregnancy did not affect the mode of delivery and pre-term delivery rate. **Conclusion:** Feto-maternal complications with thrombocytopenia depend primarily on the disease causing it. Gestational thrombocytopenia, preeclampsia, HELLP syndrome, malaria, ITP and dengue were the common causes of thrombocytopenia in pregnant. Patients with GT and ITP have better maternal and peri-natal outcomes as compared to preeclampsia and HELLP syndrome.

Keywords: Peri-natal Outcome, Pregnancy, Thrombocytopenia.

INTRODUCTION

Thrombocytopenia affects 6-10% of all pregnant women.^[1] Most studies report a reduction in platelet count about 10% lower than the pre-pregnant values. It may be a diagnostic and management problem, and has many causes, some of which are specific to pregnancy.^[2] Although most cases of thrombocytopenia in pregnancy are mild, and have no adverse outcome for either mother or baby, occasionally a low platelet count may be part of a more complex disorder with significant morbidity and may be life threatening.

uremic syndrome, and immune thrombocytopenia (ITP) may relapse or be first detected during pregnancy.^[3] 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 thrombocytopenia's, infections and malignancies.^[4] We carried out the present study to see the prevalence of thrombocytopenia during pregnancy, its cause and effect on feto-maternal outcome.

MATERIALS AND METHODS

It was a prevalence study conducted at Guru Gobind Singh Medical College and Hospital, Faridkot, Punjab. Pregnant females were taken from OPD and Indoor wards of Department of Obstetrics and Gynecology during December 2015-November 2016. All women after 28 week of gestation (according to last menstrual period or first trimester fetal ultrasonography) were screened for platelet count. Platelet count of 1,00,000 to 1,50,000/ μ L, 50,000 to 1,00,000/ μ L & <50,000/ μ L were classified as mild, moderate and severe thrombocytopenia respectively. Informed consent was taken. Detailed menstrual, obstetric history was taken. Etiologies of thrombocytopenia were evaluated according to

Name & Address of Corresponding Author

Dr. Monica Arora
Assistant Professor,
Dept of Medicine,
Guru Gobind Singh Medical College, Faridkot, Punjab -
151203.

Thrombocytopenia in pregnancy can be isolated or associated with systemic disorders like severe preeclampsia, HELLP syndrome (hemolysis, elevated liver enzymes, low platelets), or AFLP (acute fatty liver of pregnancy). Furthermore, autoimmune diseases, including systemic lupus erythematosus, anti-phospholipid syndrome, thrombotic thrombocytopenic purpura, hemolytic

proforma. Systolic & diastolic blood pressure was taken. Investigations were sent in form of complete blood hemogram, detection of malaria by antigen detection (rapid diagnostic test or RDTs) and/or peripheral blood smear, urine for random sugar and urine for albumin. Blood pressure >160/110 mm of Hg with urine albumin \geq +1 for > two readings 24 hours apart were defined as having severe preeclampsia. Other etiologies were diagnosed by liver function test, coagulation profile, dengue IgG and IgM antibody titers. Antiphospholipid antibodies were tested after ruling out all other etiologies. Women already diagnosed having immune causes of thrombocytopenia were also evaluated. Women with moderate thrombocytopenia without any other cause were classified as having gestational thrombocytopenia.

The following characteristics were compared: intra-partum and post-partum complications such as placental abruption, and severe postpartum bleeding. Women who needed blood transfusion were also studied. Fetal outcomes were compared with regard to birth weight, birth asphyxia, Apgar scores at 1 and 5 minutes, admission to the Neonatal Intensive Care Unit (NICU), neonatal thrombocytopenia (platelet count of $< 150 \times 10^9/L$), and stillbirth. Newborns weighing < 2500 grams were classified as 'low birth weight'. Platelet counts of all newborns were observed in the first 48 hours postpartum.

RESULTS

Among 1450 deliveries, total 137 women were having thrombocytopenia in third trimester. The commonest etiology was gestational thrombocytopenia (61%). Thrombocytopenia due to severe preeclampsia and HELLP syndrome in this study was 24%, Thrombocytopenia in pregnancy did not affect the mode of delivery and pre-term delivery rate. Cesarean section was performed in around 42.5% patients. Only 6 case of postpartum hemorrhage was found in the patient with severe thrombocytopenia, and 9 cases of placental abruption in the patient with moderate thrombocytopenia. Placental abruption 9(6.6%), PPH 6(4.3%), Wound hematoma 5(3.6%) were noted. Fetal complications – stillbirth 11(8%), low birth weight 14(10.21%), low APGAR 22(16.2%) and neonatal thrombocytopenia 6(4.3%).

Table 1: Cause of thrombocytopenia.

Cause of thrombocytopenia	Number of cases
Gestational thrombocytopenia	83(61%)
Severe pre-eclampsia/HELLP	33(24%)
ITP	3(02%)
Malaria	15(11%)
Dengue	3(02%)

Table 2: Maternal outcome.

Maternal outcome	GT	HELLP/Preeclampsia	ITP	Malaria
Placental abruption	1	6	0	2
Post-partum hemorrhage	0	4	0	2
Episiotomy hematoma	0	1	0	0
CS site wound hematoma	1	3	0	1

Table 3: Fetal outcome.

Outcome parameters	Cause of thrombocytopenia			
	GT	HELLP/Preeclampsia	ITP	Malaria
Fetal outcome				
1-min APGAR	2	8	0	3
5-min APGAR	2	5	0	2
Low birth weight		13	1	0
Neonatal thrombocytopenia	2	1	0	3
Still birth	0	5	0	6

DISCUSSION

Thrombocytopenia affects 6-10% of all pregnancies.^[1] After anemia it is the second most common hematologic abnormality during pregnancy and is usually a benign condition.^[1] Prevalence of thrombocytopenia in the present study was 9.4% among which 2.3% had moderate to severe thrombocytopenia. Dwivedi et al^[5] also observed prevalence of 8.17% with 4.08% having severe thrombocytopenia in their study. Gestational thrombocytopenia was the commonest and associated with least adverse fetomaternal outcomes

in the present study. Regardless, the fall in the platelet count during normal pregnancy results in some pregnant women developing platelet counts that fall into the thrombocytopenic range.^[6] Gestational thrombocytopenia is not associated with adverse outcomes to either the mother or fetus.^[7] The incidence of fetal or neonatal thrombocytopenia in the offspring of such patients is no higher than that of non-thrombocytopenic women, and when it occurs often results from coincident neonatal alloimmune thrombocytopenia.^[7,8] The degree of maternal thrombocytopenia is generally not severe enough to increase the risk of bleeding with delivery. Michal Parnas et al^[9] also observed incidence of

53% of thrombocytopenia. Platelet counts normalize within 4-10 weeks following delivery. Burrows reported that all women with GT had normal or normalizing platelet counts by the seventh postpartum day.^[10]

Thrombocytopenia due to Preeclampsia and HELLP syndrome accounted for 24% in our study group. They were associated with bad fetomaternal outcomes. Major hemorrhages were uncommon, but oozing from incision site and wound hematomas occurred. Other causes of thrombocytopenia in pregnancy were malaria and dengue. All the patients were managed accordingly. ITP was found in 3% of the patients with thrombocytopenia. No significant hemorrhage occurred even with moderate to severe thrombocytopenia.

Placental abruption (6.6%), PPH (4.3%) and Cesarean Section incision site oozing and wound hematoma (3.6%) were the most common maternal complications noted. Only one patient developed episiotomy site hematoma and none had hemoperitoneum. The above results were in agreement with the study done by Dwivedi et al.^[6] These complications are mostly seen with HELLP syndrome, pre-eclampsia and malaria. Similarly, the fetal complications like birth asphyxia, low birth weight, still birth and neonatal thrombocytopenia were also higher in the patients with preeclampsia, HELLP syndrome and malaria. The results were in concordance with the study of Burrows et al^[10] and Dwivedi et al^[5].

CONCLUSION

Gestational thrombocytopenia, preeclampsia, HELLP syndrome, malaria, ITP and dengue were the common causes of thrombocytopenia in pregnant. Patients with GT and ITP have better maternal and perinatal outcomes as compared to preeclampsia and HELLP syndrome, which are associated with adverse fetomaternal outcome. Early diagnosis and management play a key role in decreasing the adverse outcome.

REFERENCES

1. McCrae KR. Thrombocytopenia in Pregnancy. In: Michelson AD, ed. Platelets. New York, NY: Elsevier. 2006: 925–933.
2. Boehlen F., Hohlfield H., Extermann P., Perneger T. & de Moerloose P. Platelet count at term pregnancy: a reappraisal of the threshold. *Obstetrics and Gynecology*. 2000; 95, 30.
3. Cunningham FG, Gant NF, Leveno KJ, et al. Hematological disorders. *Williams obstetrics*, 21st ed. McGraw-Hill, New York 2001, 1307–1338.
4. Burrows R.F. & Kelton J.G. Thrombocytopenia at delivery: a prospective survey of 6715 deliveries. *American Journal of Obstetrics and Gynecology*. 1990; 162: 732–734.
5. Dwivedi P, Puri M, Nigam A. et al. Fetomaternal outcome in pregnancy with severe thrombocytopenia. *European Review for Medical and Pharmacological Sciences*. 2012;16: 1563-66.

6. Boehlen F, Hohlfield H, Extermann P, Perneger TV, de Moerloose P. Platelet count at term pregnancy: a reappraisal of the threshold. *Obstet Gynecol*. 2000;95:29–33.
7. Burrows RF, Kelton JG. Incidentally detected thrombocytopenia in healthy mothers and their infants. *N Engl J Med*. 1988;319:142–145.
8. Shehata N, Burrows RF, Kelton JG. Gestational thrombocytopenia. *Clin Obstet Gynecol*. 1999;42:327–334.
9. Parnas M, Sheiner E, Shoham et al. Moderate to severe thrombocytopenia during pregnancy. *Eur J Obstet Gynecol Reprod Biol*. 2006;128: 163-68.
10. Burrows RF, Kelton JG. Thrombocytopenia at delivery: a prospective survey of 6715 deliveries. *Am J Obstet Gynecol*. Mar 1990; 162(3):731-4.

How to cite this article: Arora M, Goyal L, Khutan H. Prevalence of Thrombocytopenia during Pregnancy & Its Effect on Pregnancy & Neonatal Outcome. *Ann. Int. Med. Den. Res*. 2017; 3(2):ME04-ME06.

Source of Support: Nil, **Conflict of Interest:** None declared