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Evaluation of Feto-Maternal Outcome in Pregnancy Complicated by Thrombocytopenia

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Abstract
Objective: *Evaluation of feto-maternal outcome in pregnancy complicated by thrombocytopenia.*
***Methods**: The study was conducted in the department of obstetrics and gynecology, SKIMS Medical College and Sher-e-kashmir institute of medical sciences, Kashmir from June 2017 to August 2018. Total of 200 pregnant women were studied including 100 women with pregnancy thrombocytopenia as cases and 100 pregnant women without thrombocytopenia as control among the women admitted in wards and labour room.*
Results: *the mean period of gestation was significantly less among women with thrombocytopenia. The mean birth weight, Apgar score at 1 minute and Apgar score at 5 minutes was less in cases as compared to control. The mean platelet count among cases of thrombocytopenia has shown significant rise between 48 hours and 6 weeks after delivery.*
Conclusion: *Preterm labour and low birth weight is more common in pregnancy complicated by thrombocytopenia. Maternal complications are more in cases than in controls; therefore careful surveillance is required for early detection and management of complications in pregnancy complicated by thrombocytopenia.*
Keywords: *Pregnancy, thrombocytopenia and preterm labour.*

Introduction

Thrombocytopenia is defined as a platelet count below 150×109/l and is caused by accelerated platelet destruction or decreased production.[1] the diagnosis and management of thrombocytopenia during pregnancy is difficult and the diagnostic distinction among the potential etiologies for thrombocytopenia is often impossible, yet the diagnosis has major importance for management. Furthermore, management involves not only the care of the mother, but the anticipation of risk for thrombocytopenia in the infant.[2]

Thrombocytopenia in pregnancy may result from a variety of causes ranging from benign disorders such as Gestational thrombocytopenia to life threatening syndromes such as the HELLP syndrome.[3, 4, 5] Pregnancy thrombocytopenia is an underexplored condition with very limited availability of literature especially on the feto-maternal outcome. Present study was aimed at investigating Feto-maternal outcome of pregnancies complicated by thrombocytopenia.

Aims and Objectives

Evaluation of feto-maternal outcome in pregnancy with thrombocytopenia.

Material and Methods

Present study was conducted in the department of obstetrics and gynecology, Sher-e-kashmir institute of medical science and SKIMS Medical College, jammu and Kashmir from june 2017 to august 2018. SKIMS is 100 bedded tertiary care centre for Obstetrics and gynecology. Total of 200 pregnant women were studied among the women admitted in wards and labour room. The subjects were allocated to two groups-

Study Group: Included randomly selected 100 pregnant women with Thrombocytopenia.

Control Group: Included randomly selected 100 pregnant women with normal platelet count.

Study Group

Inclusion Criteria

i. All pregnant women with thrombocytopenia
ii. Age range between 20 and 40 years
iii. Gestational age between 32 and 42 weeks calculated from first day of last menstrual period.

Exclusion Criteria

i. Pregnancy with:
   a. Alcoholism
   b. Smoking
ii. Drug induced thrombocytopenia
iii. Spurious thrombocytopenia

Control Group

The women representing the control group were chosen from the women who fulfilled the above mentioned criteria but were having normal platelet count.

All the subjects were informed about the procedure. A verbal informed consent was taken before taking the blood sample. While evaluating the results of study, relevant clinical data was collected from every patient and the baseline investigations including ultrasonography were performed. The blood sample was taken from the ante-cubital vein of every patient and investigated for; Complete blood counts (Mythic-18 hematology cell counter) and Peripheral blood film. All the subjects were followed throughout labour and perpuerum to ascertain feto-maternal complications. A repeat complete blood count was performed six weeks after delivery.

Statistical Analysis

Data was expressed as mean and percentage. Patient characteristics were compared using chi-square analysis, Mann-Whiteney-U test, Wilcoxon Signed Ranks Test and student t- test. Two sided $p<0.005$ was defined for significance. Software used was SPSS 16.0 and MS Excel.

Results and Observations

Table 1. The comparison of gestational age among the studied subjects has shown that the mean period of gestation of cases at the time of admission was significantly low ($p<0.001$)

	Study (mean ±SD)	Control (mean ±SD)	P value
Maternal age	23.40 ± 2.27 (20,30)	23.06 ± 2.38 (20,28)	0.365(NS
parity	2.69 ± 1.35 (1,5)	2.35 ± 1.23 (1,5)	0.081(NS)
Period of gestation	37.70 ± 1.25 (35,40)	39.05 ± 1.12 (36,42)	0.000(Sig)

Table 2 Clinical characteristics of new born of women with and without thrombocytopenia has shown that the birth weight ,APGAR score at 1minute and APGAR score at 5minutes in study group was significantly lower in study group than in control group (p value<0.005).

	study (mean ±SD)	Control (mean ±SD)	P value
Birth wt. in kgs.	3.16 ±2.33 (1.8,3.8)	3.21±0.45 (2.2,4.2)	0.000(Sig)
APGAR at 1min.	7.77±0.66 (4,9)	8.03±0.36 (7,9)	0.001(Sig)
APGAR at 5min.	8.87±0.95 (0,10)	9.10±0.30 (9,10)	0.001(Sig)

Table 3 The Maternal platelet count among cases of thrombocytopenia has suggested significant rise in platelet count between 48 hours and 6 weeks after delivery.

	study (mean ±SD)	Control (mean±SD)	P value
Platelet count at admission	74520.00±22375.79 (40000, 140000)	273450.00±68727.59 (188000, 400000)	0.000(sig)
Platelet count (48hrs after delivery)	64179.00±18850.66 (10900, 123000)	257490.00±62289.72 (189000, 370000)	0.000(sig)
Platelet count (6wks after delivery)	237130.00±100393.43 (23000, 400000)	287670.00±70799.19 (188000, 410000)	0.001(sig)

Discussion

Platelets play an important role in both primary and secondary hemostasis, any decrease in platelet count in peripheral blood causes justifiable concern particularly in pregnancy, when bleeding problems often occur. Thrombocytopenia, defined as a platelet count less than 150,000/mm^3, [6,7] complicating 10% of all pregnancies.[8]

Thrombocytopenia in pregnancy may result from a number of causes, some of these are unique to pregnancy, while others may occur with increased frequency during gestation.[9] Present study was undertaken to evaluate the feto-maternal outcome in pregnancy complicated by thrombocytopenia.

The data regarding age, period of gestation, parity, obstetric risk factors, new born clinical characteristics, cord blood platelet count, maternal complications, maternal blood platelet count at the time admission and repeated after 48 hours and after 6 weeks of delivery were compared.

The demographic factors like maternal age and parity distribution between two groups were more or less similar and were statistically insignificant.

The observations from present study (table 1) had revealed that the mean gestational age in study group (37.70 ± 1.25) was significantly less than the control group (39.05 ± 1.12), (p<0.001). Similar results were obtained in their study by Michal parnas et al 2005, Gryzb A et al in 2006 and Bhat YR et al 2008.[8,10,11] The Higher rates of preterm deliveries (<37 weeks) in present study can be explained due to early delivery of fetus which is part of management of preeclampsia and HELLP syndrome, labor induction could be a confounder for this association.[12]

In present study (table 3) the mean platelet count of cases at six weeks after delivery was 237130.00±100393.43, which is significantly higher than mean platelet count at the time of admission 74520.00±22375.79 (p<0.005), there were only 15% of cases with platelet count less than 150,000/mm^3 , six weeks after delivery. The mean platelet count 48 hours after delivery(64179.00±18850.66) was significantly less than that of cases at the time of admission and six weeks after delivery (p<0.05). Our results are in agreement with Marco Ruggeri et al (1997) and Singh Nisha et al (2012), they have found normalization of platelet count within 1 to 6 weeks of delivery in their studies.[13, 14] The mild

fall in platelet count at 48 hours of delivery could be explained, due to consumption of platelets and blood loss at the time of delivery.[15] The cases who remained thrombocytopenic (platelet count <150,000) after six weeks of delivery were due to medical thrombocytopenia.

In our study (table 2) the mean birth weight of study group (3.16 ±2.33) and APGAR score at 1 minute (7.77±0.66), and at 5 minutes (8.87±0.95) is significantly lower than control group with mean birth weight (3.21±0.45) and APGAR at 1 minute (8.03±0.36), and at 5 minutes (9.10±0.30), ($p<0.002$). Similar results were obtained in studies conducted by Michal Parnas et al (2006) and Bhat YR et al (2008). [8, 11]

Thus from our study following conclusion was made;

1) The mean period of gestation in study group was less than that of control group.
2) Increasing trend in platelet count was seen between 48 hours and six weeks after delivery among cases of thrombocytopenia.
3) Pre-delivery platelet count of studied subjects was higher than platelet count at 48 hours after delivery.
4) The neonatal Apgar score of study group at 1 minute and at 5 minutes was less than that of control group.
5) Neonatal birth weight was less in study group than in control group
6) The maternal complications like postpartum hemorrhage (18%), abruption placenta (4%) and ante-natal bleeding per-vaginum (1%) in study group was more than control group, but the difference was statistically insignificantly.

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