

# Pregnancies with Platelet Count Lower Than 70000 Platelets/ $\mu$ l

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**OBJECTIVE:** In this study, pregnancies complicated with thrombocytopenia platelet count lower than 70000 platelets/ $\mu$ l were evaluated.

**STUDY DESIGN:** Twenty two pregnancies with platelet count lower than 70000 platelets/ $\mu$ l were evaluated according to age, platelet count, vital signs, gestational age at the diagnosis, need of transfusion, birth weight, newborn's thrombocytopenia, type of delivery, gestational age, dose and duration of cortisone use and additional maternal complications.

**RESULTS:** Mean age of the group was 26.0 (range 18-35) years. Four cases had the diagnosis of Immune Thrombocytopenic Purpura (ITP). Within the ITP group one pregnancy ended with intrauterine mortal fetus at 16th week of gestation. Four patients had hypertension with thrombocytopenia; two of them had the diagnosis of HELLP Syndrome, two had chronic hypertension. The other 14 patients with thrombocytopenia had no other maternal disease and they were accepted as gestational thrombocytopenia. Among these 14 patients one of the pregnancies ended with intrauterine mortal fetus at 27 weeks of gestation, the others had healthy babies. In the study group four cases, with the diagnosis of ITP necessitated steroid therapy. 60 mg/day steroid therapy was administered. In two cases the therapy lasted for six days till delivery, in the other 2 it lasted in 30 days. Among all patients eight of them needed prophylactic transfusion before deliveries. Among these 8 patients, one delivered vaginally and 7 delivered by cesarean section. Among all patients two had intrauterine mortal fetus and among the other 20 cases there were 2 preterm deliveries at 33rd and 34th weeks of gestation. Mean gestational age of our study group was 38.5 weeks (range 30-40 weeks). Among 20 pregnancies with healthy fetuses, 11 pregnant underwent cesarean section, 9 delivered vaginally. There was no significant bleeding associated with vaginal deliveries or cesarean sections. No infants had asphyxia (1st and 5th minutes appgar scores were 7 or more) at birth. Platelet counts were measured for 20 infants and there was neither thrombocytopenia nor a complication among these infants.

**CONCLUSION:** If thrombocyte count of a pregnant is not less than 70000/ $\mu$ l and her symptoms are not related with thrombocytopenia then only follow up for platelet counts is sufficient in pregnancy. However if it is less than 70000/ $\mu$ l, treatment of thrombocytopenia and strict follow up of patient is necessary. (*Gynecol Obstet Reprod Med 2006; 12:92-95*)

**Key Words:** Thrombocytopenia, Pregnancy

Gestational thrombocytopenia can be defined either as a specific disorder or as a group of thrombocytopenic disorders that occur in pregnancy. Thrombocytopenia is defined as a platelet count less than the normal for the laboratory. The normal range is generated by measuring the platelet count in a number of healthy individuals (but not necessarily pregnant women). This is at or very close to 150.000 platelets/ $\mu$ l, hence thrombocytopenia is defined as a platelet count less than this number.

Incidental thrombocytopenia of pregnancy is the most common cause of thrombocytopenia in pregnancy, occurring 60-70 women per 1.000 live births and accounting for more than 75% of cases of pregnancy associated thrombocytopenia.<sup>1,4</sup> When a number of these patients were followed after

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delivery, we noted that the platelet count typically returned to normal within six weeks of delivery, which also is the approximate length of the time required for other hemostatic factors that are altered during a normal pregnancy to return to normal. Incidental thrombocytopenia can be defined as a mild thrombocytopenia having a platelet count between 70.000-150.000 platelets/ $\mu$ l.<sup>5</sup> Patients with incidental thrombocytopenia do not require any alteration in their treatment. Investigation of the babies born to mothers with incidental thrombocytopenia of pregnancy is not necessary.

In this study, the pregnancies complicated with the thrombocytopenia having a platelet count lower than 70.000 platelets/ $\mu$ l were evaluated.

## Material and Methods

We investigated the pregnancies having platelet count lower than 70000 platelets/ $\mu$ l. Age, platelet count, vital signs, gestational age at the diagnosis, need of transfusion, newborn weight, occurrence of newborn thrombocytopenia, type of delivery, gestational age at which birth occurs, dose and duration of cortisone use, additional maternal complications were evaluated. The patients having platelet count between 70000-150000 platelets/ $\mu$ l were excluded although they are accepted as thrombocytopenic.

Blood samples were taken from women at six o'clock in morning everyday while they were in hospital. Blood was analyzed by Coulter Gen-S System 2, Beckman Coulter Machine.

Gestational age of women was calculated by the last menstruation date or if they were not sure then ultrasonographic dating was accepted.

Statistical analysis was performed using a commercial computer package (SPSS 10.0 for Windows, SPSS Inc., Chicago, IL.)

## Results

The study group included 22 pregnant women with platelets  $<70000/\mu\text{l}$ . Mean age of the group was 26.0 (range 18-35) years. Platelet counts were shown in Figure I. Mean platelet count was  $54.681.8 \pm 14717.6/\mu\text{l}$  (19.000-70.000  $/\mu\text{l}$ ). The median of platelet count was 57.500 $/\mu\text{l}$ .

In our group 4 cases had the diagnosis of ITP (Immune Thrombocytopenic Purpura). Among this ITP group one patient had intrauterine mortal fetus at 16<sup>th</sup> week of gestations and the other three had healthy babies.

Four patients had hypertension with thrombocytopenia; two of them had the diagnosis of HELLP Syndrome, two had chronic hypertension.

The other fourteen patients had the thrombocytopenia, but no other maternal disease. They were accepted as gestational thrombocytopenia. Among these fourteen patients one of them had an intrauterine mortal fetus at 27 weeks of gestation and the others had healthy babies.

Diagnosis and distributions of the patients are shown in Table I.

Table I. Diagnosis of the patients

	Number of Patients
Gestational Thrombocytopenia	14
ITP	4
Chronic Hypertension	2
HELLP Syndrome	2

In the study group 4 cases, with the diagnosis of ITP, necessitated steroid therapy. 60 mg/day steroid therapy was administered. In 2 cases the therapy lasted for six days till delivery since the thrombocyte counts of them were not higher than 50.000 $/\mu\text{l}$  during their pregnancy. And in the other 2 it lasted for 30 days since the thrombocyte counts of them were higher than 70.000 $/\mu\text{l}$  during the course of their pregnancy.

Among 22 patients 8 of them needed prophylactic transfusion before deliveries of them. Among these 8 patients one delivered vaginally, and seven delivered by cesarean section.

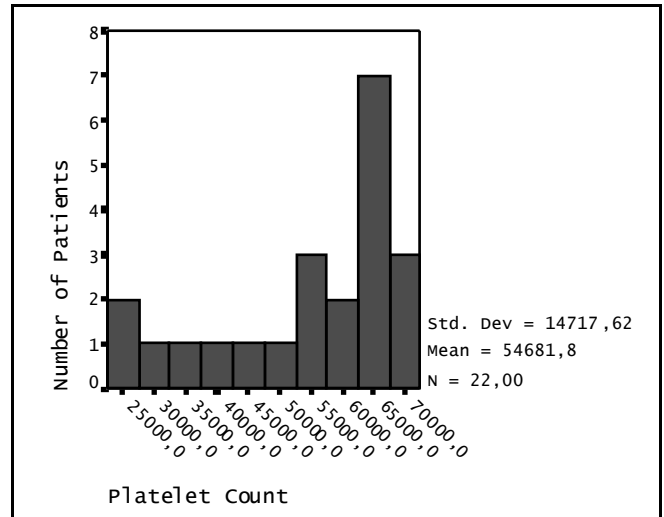


Figure 1. Platelet counts of patients

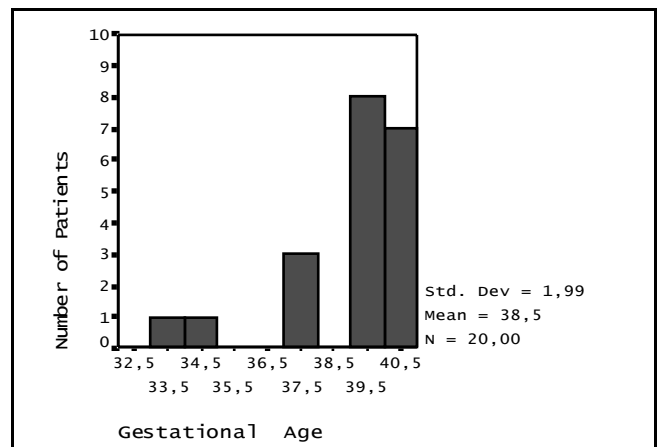


Figure 2. The distribution of gestational ages at birth

Among 22 pregnancies 2 had intrauterin mortal fetus. And among the other 20 cases, there were two preterm deliveries at 33<sup>rd</sup> and 34<sup>th</sup> weeks of gestation. The distribution of gestational ages at birth was shown in Figure II. Mean gestational age of our study group was 38.5 weeks (range 30-40 weeks).

Among these 20 pregnancies 11 women underwent cesarean section and 9 delivered vaginally. Of the 9 cesarean section cases 3 had C/S for thrombocytopenia and the others had obstetrical indications. There was no significant bleeding associated with vaginal deliveries or C&S. No infants had asphyxia (1<sup>st</sup> and 5<sup>th</sup> minutes apgar scores were 7 or more) at birth. Platelet counts were measured for 20 infants and there was neither thrombocytopenia nor a complication among these infants.

## Discussion

Thrombocytopenia in pregnant women is relatively common. The causes and mechanism of thrombocytopenia are still a matter of controversy. The majority of thrombocytopenic pregnant women are healthy, have no history of thrombocytopenia and are incidentally detected by routine blood

testing. This condition, called incidental thrombocytopenia, usually has no influence either on pregnancy and delivery or on the newborn, particularly on the risk of neonatal thrombocytopenia. Incidental thrombocytopenia appears to be a variant of the physiologic thrombocytopenia that accompanies normal pregnancy.

Sainio et al.<sup>6</sup> found no instances of moderate neonatal thrombocytopenia (a cord platelet count of less than 50000 platelets/ $\mu$ l). And they concluded that unless the platelet count is less than 70000 platelets/ $\mu$ l consistently, or the patient is symptomatic, investigations can be saved for those who do not return to a normal platelet count postpartum.

Boehlen et al.<sup>7</sup> found four infants with severe thrombocytopenia (a cord platelet count less than 20000 platelets/ $\mu$ l). Morbidity and mortality were confined to two, one with alloimmune thrombocytopenia and the other with acute myeloid leukemia M7 with cytomegalovirus infection. And they said that investigations should not be carried out if the platelet count was over 115000 platelets/ $\mu$ l and the patient asymptomatic.

In our study we just investigated the pregnancies having platelet count lower than 70000 platelets/ $\mu$ l. Platelet counts were measured for 20 infants and there was neither thrombocytopenic nor a complication among these infants.

Isler et al.<sup>8</sup> reported maternal mortality in HELLP syndrome due to intracranial hemorrhage. And Martin et al.<sup>9</sup> in a retrospective study investigated the thrombocytopenia related to HELLP syndrome and they did not report any mortality.

In our study we found two HELLP syndrome cases among 22 pregnant. And there were no mortality or morbidity.

In a case with HELLP syndrome we used i.v. steroid therapy for fetal lung maturation and to improve maternal platelet count and to reduce liver enzymes. Tompkins and Thiagarajah<sup>10</sup> reported that overall platelets increase in 45 out of 52 patients with steroid therapy, but this increase was anywhere from 2000 to 128000 platelets/ $\mu$ l. And the best regime of steroid administration was not apparent in these cases.

Burrows et al.<sup>11</sup> reported that in the pregnancies complicated with ITP, the mother should be treated according to her risk from the reduced platelet count, not with the assumption of improving the fetal platelet count; As the fetal risk of severe thrombocytopenia is rare the delivery mode should be determined by obstetric indications only. A cord platelet count should be performed to identify those infants at risk of thrombocytopenia as the platelet counts commonly fall neonatally. In their review they examined several large reports and they did not find any infants having major morbidity and mortality.

Yamada et al.<sup>12</sup> reported 63 pregnancies and 66 infants. There were five neonatal platelet counts of less than 50000 platelets/ $\mu$ l, but none was less than 20000 platelets/ $\mu$ l.

Song et al.<sup>13</sup> reported 31 mothers and 32 infants. No neonate was born with a platelet count less than 50.000 platelets/ $\mu$ l. They performed 16 cordocentesis, management was unchanged and the authors concluded that cordocentesis was technically difficult and need not to be performed. They also concluded that mode of delivery can be determined just on the basis of obstetric indications.

In our study we administered steroid therapy to four cases. We did not find any complications and thrombocytopenia in infants. All four cases needed also thrombocyte suspension transfusion before delivery.

In the study of Sainio et al.<sup>6</sup> among 35 patients 15 were delivered by cesarean section. And among these 15, just 4 of them were delivered by cesarean section due to the hematological reasons. In our study just 3 patients were delivered by C&S due to thrombocytopenia. The others were delivered due to the obstetrical indications. This, as well the recommendations given by the American Society of Hematology,<sup>14</sup> reflects the anxiety to lower the bleeding risk for these infants by abdominal delivery. However, at present there is no direct evidence that cesarean section is a benefit.

In the differential diagnosis of thrombocytopenia SLE (Systemic Lupus Erythematosus) should also be thought. In laboratory findings of SLE; anemia is common and also there may be leukopenia and thrombocytopenia.<sup>15</sup> However it is a systematic disease including renal, neurological, immunological, dermatological and hematological disorders. In our patients there were not any of these disorders.

### Conclusion

If thrombocyte count of a pregnant is not less than 70000/ $\mu$ l and her symptoms are not related with thrombocytopenia than only follow up for platelet counts is sufficient in pregnancy. However if it is less than 70000/ $\mu$ l, treatment of thrombocytopenia and strict follow up of patient is necessary.

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