Management of Immune thrombocytopenic purpura during pregnancy: A single center experience

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ABSTRACT:

Background: Immune thrombocytopenic Purpura (ITP) is the second most common cause of an isolated low platelet count during pregnancy. It account for about 3% of thrombocytopenic cases during delivery. Treatment is indicated, if there is an evidence of bleeding or platelet count is less than 30,000/µl. Herein, we presented a medical record of twenty-four pregnant women, who were diagnosed with ITP during pregnancy.

Method: A total number of twenty four pregnant women diagnosed with primary ITP and having platelet count of less than 30000/µl were enrolled in the study. Oral prednisolone (1mg/kg) was started in all patients with an aim to keep the platelet count above 50000/µl during delivery. Steroid was continued for 21 consecutive days and were tapered (10 mg) every week, if platelet counts were above 30000/µl.

Data pertaining to the ITP during pregnancy was recorded for age, platelet count, mode of delivery and complications related to steroid therapy and were analyzed by simple statistical analysis.

Result: ITP was observed in about 58%, 25% and 17% of the cases during first, second and third trimester respectively. About, 63% of patients presented with purpuric rash, 18% presented with mucosal bleed, one present presented with hematuria and others were asymptomatic. More than two third of cases responded to the steroid and in those cases platelet counts were above 50,000/µl at the time of delivery. All subjects delivered a healthy child. There was no maternal mortality and post-partum hemorrhage was absent in all patients.

Conclusion: Steroid is the treatment of choice for all cases of ITP. ITP is no longer a contraindication to the continuation of pregnancy, the tradition and tendency to advice for abortion in these pregnant mothers, may not be justifiable.

Keyword: *Thrombocytopenia, purpura, pregnancy, steroid.*

INTRODUCTION

Thrombocytopenia is second only to anemia as a common hematological abnormality during pregnancy[1]. Most of the patients with mild to moderate thrombocytopenia are considered as a case of gestational thrombocytopenia, which do not pose any risk to the mother and the fetus. While, some of the disorders like Preeclampsia, Idiopathic Thrombocytopenic Purpura (ITP), Systemic Lupus Erythematosus (SLE), Disseminated Intravascular Coagulation (DIC) are significantly associated with moderate to severe thrombocytopenia leading to maternal and fetal death[2].

ITP account for about 3% of thrombocytopenic cases during delivery and it is considered as the second most common cause of isolated thrombocytopenia in pregnancy. Differentiating ITP from other causes of thrombocytopenia may be a difficult task. As a rule of thumb, developing a platelet count 100 X 109 / L during first trimester of pregnancy with moderate to severe decreased platelet count during delivery is consistent finding in ITP. However, ITP may develop even during third trimester and platelet count may be 50-80 X 109 / L in gestational thrombocytopenia[3]. For the diagnostic assessment of ITP in pregnancy, all potential causes of thrombocytopenia must be considered and ruled out in turn[4].

Herein, we present a medical record of twenty-four pregnant women diagnosed with ITP during pregnancy and were treated with steroid.

MATERIAL AND METHOD

A total number of twenty four pregnant women diagnosed with primary ITP and having platelet count of less than 30000/µl were enrolled in the study. Oral prednisolone (1mg/kg) was started in all patients with an aim to keep the platelet counts above 50000/µl during delivery. Steroid was continued for 21 consecutive days and were tapered (10 mg) every week, if platelet counts were above 30000/µl on the 21st day. Pregnant women with platelet count below 30000/µl on 21st day of steroid therapy were termed non-responders. Non-responders with bleeding symptoms were managed with judicious use of tranexamic acid and platelet transfusion. Mode of delivery and type of anesthesia to be administered during delivery were decided by the treating obstetricians and anesthesiologists. The delivery of babies was carefully monitored by treating Obstetricians and Hematologists. Prednisolone was continued for two weeks after delivery and then gradually tapered and stopped.

Data pertaining to the ITP during pregnancy was recorded for age, platelet count, mode of delivery and complications related to steroid therapy and were analyzed by simple statistical analysis.

RESULTS

The mean age of pregnant women with ITP at the time of diagnosis was 30 years. ITP was observed in about 58%, 25% and 17% of the cases during first trimester, second and third trimester respectively. About 63% presented with purpuric rash, 18% presented with mucosal bleed, one percent presented with hematuria and remaining were asymptomatic. Mean platelet count at the time of diagnosis in the index cases were 15,200/µl, whereas at the time of delivery it became 94000/µl. There was a significant difference (p=0.0000002) between the platelet count at the time of diagnosis and at the time of delivery after steroid therapy. Eighty three percent of our patients responded to the steroid and in responded cases platelet count were above 50,000/µl at the time of delivery. Twenty five percent of our patients were advised for medical abortion by their treating gynecologist during recent pregnancy. Among them, sixty seven percent had undergone medical abortion for their prior pregnancy because of low platelet counts.

Twenty percent of ITP patients delivered premature baby, whereas remaining eighty percent delivered baby at term. The modes of delivery were decided by treating gynecologists and lower segment caesarean section (LSCS) was done in sixty seven percent of cases and only twenty three percent gave birth to the baby by normal vaginal delivery. Twelve percent of mothers with ITP developed steroid induced gestational diabetes. Hypertension was reported in none of the cases. Thrombocytopenia was not detected in any of the newborn. There was no maternal mortality and Post-partum hemorrhage was absent in all of our patients.

Table 1: Outcome of steroid medication in ITP during pregnancy

	1st Trimester	2nd Trimester	3rd Trimester
Number of patients	14	6	4
Mean age at the time of diagnosis	30 years	28 years	32 years
Mean Platelet count at the time of diagnosis	15,500	13,800	16,300
Mean platelet count after steroid therapy	98,900	104600	78,500
Number of patients with V/D	7	1	0
Number of patient with LSCS	7	5	4
Number of preterm delivery	1	2	1
Number of child with male sex	10	4	3
Number of child with female sex	4	2	1
Number of patient with Gestational DM	0	2	1
Number of patient with steroid induced HTN	0	0	0
Number of newborn with thrombocytopenia	0	0	0
P-value		0.0000002	

DISCUSSION

The clinical management of pregnancy related ITP require team work of the obstetricians and hematologists. Pregnant women with ITP need careful monitoring, and should be seen by the obstetrician and hematologist on regular antenatal visit. Decisions concerning the need for therapy should be determined according to severity of disease. In comparison to non-pregnant individuals, the bleeding risk is greater in pregnant women with platelet count less than 20000-30000/µl. There is no absolute platelet count threshold above which bleeding does not occur. Platelet count should be maintained above 30,000/µl throughout the pregnancy and it should be kept above 50,000/µl during delivery to minimize the need of platelet transfusion[5]. In pregnant women with low platelet count, corticosteroids are considered as the first line of therapy[6]. Corticosteroids help in the inhibition of phagocytosis of IgG-sensitized platelets and reduce autoantibody production[7]. Therefore we started steroid 1 mg/kg/day (based on the pre-pregnancy weight) in the patients with platelet count below 30000/µl and 83% of our patients responded well on steroid therapy.

Prednisolone can show some adverse effects like increase weight, hypertension, hyperglycemia and preterm delivery, which can be distressing to the pregnant women[8]. Some of the studies have shown that prednisolone therapy in the first trimester can cause congenital anomalies such as cleft lip and cleft palate in new born[9,10]. In our study 20% of the patients delivered a preterm baby and 12% of mothers developed steroid induced diabetes. However, facial deformity was not observed in any of the neonate.

Seventeen percent of our patients didn't respond to steroid. We acknowledge the fact that 21 days threshold may be too early for some patients to respond but because of the toxicity associated with steroid after prolong use, we decided to fast tapper and stop the

steroid in non-responders. Alternatively, Intravenous immunoglobulin (IVIg) can be considered as first line therapy for pregnancy-associated ITP, especially when therapy is needed for shorter duration, as it is less likely to induce toxicities such as hypertension[7]. However, IVIg is expensive mode of treatment and it was not given to any of our patient because of cost related issues.

In patients, who fail to respond to corticosteroids, splenectomy may be considered as another option. Approximately 40% to 85% of pregnant women, who undergo splenectomy have shown remission of ITP with most reported rate of 60%[11]. In some patients, intravenous anti-D therapy has shown better results, who were beyond the optimal safety for steroid or splenectomy[12]. We did not perform splenectomy on any of our patients nor was anti-D given to any of the non-responders. They were rather managed conservatively with judicious use of tranexamic acid and platelet transfusion during delivery. They all delivered a healthy child.

In managing delivery of the patient with ITP, adequate platelet count is needed to minimize maternal hemorrhage during vaginal delivery or during LSCS. It is suggested that a maternal platelet count above 50,000/µl is adequate for vaginal delivery as well as for LSCS[5]. We found a different scenario during our study. About 25% of our patients were advised for termination of pregnancy by their obstetrician before visiting our center. In fact 67% of them had terminated their last pregnancy because of ITP. This clearly illustrates the anxiety of obstetrician while dealing with pregnant women with ITP. LSCS was also offered in some of the patients with normal platelet count during delivery. The increased incidence of LSCS in our study in the patients with platelet count more than 100,000/µl may reflect the reluctance of obstetrician for vaginal delivery in ITP patients. ITP in the mother is not an indication for LSCS and the mode of delivery should be decided properly by treating obstetrician[13]. Maternal anesthesia during delivery must be based on safety of mother. Hematoma following neuroaxial anesthesia is extremely rare in patients with stable ITP and platelet count above 80,000 to 100,000/µl is generally (recommended) considered safe for epidural anesthesia[14]. However, in our study, 100% of our patients, who underwent LSCS were administered general anesthesia.

Following delivery, platelet count should be obtained in all newborns for initial first week as neonatal thrombocytopenia may get delayed due to maternal anti-platelet IgG. IVIg is considered as the treatment of choice for the newborn with platelet count below 20,000/µl as corticosteroid may predispose to neonatal sepsis. Imaging of the brain with ultrasonography, computed tomography or magnetic resonance imaging should be performed in all newborns with platelet counts of less than 50,000/µl to exclude the possibility of occult intracranial hemorrhage that may require prompt intervention. Severe thrombocytopenia in neonate delivered to mother with ITP is relatively unusual and the platelet count less than 50,000/µl occurs only in 10%-15% of cases[15]. However, in our study, neonatal thrombocytopenia was absent in all cases.

CONCLUSION

In conclusion, ITP should not be considered as the contraindication for the continuation of pregnancy. The tradition and tendency to advice for abortion during pregnancy may not be justifiable. Primary hematology consultation is essential and a combined effort of hematologist and obstetrician is imperative for the safe delivery of the baby

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Abbreviations:

Idiopathic Thrombocytopenic Purpura

Intravenous Immunoglobulin

Lower Segment Caesarean Section

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