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Case Report

Case of Idiopathic Thrombocytopenic Purpura during Pregnancy at Term

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Abstract

Idiopathic thrombocytopenic purpura accounts for 3% of cases of thrombocytopenia during pregnancy. Discrepancies in definition and clinical criteria have led to wide range of incidence rate. It was reported to be between 0.1 and 1 case per 1000 pregnancies. In a study conducted in England, prevalence was found to be 3.6%.

The aim of management is to maintain adequate platelet count that reduces the risk of bleeding during pregnancy, delivery and postpartum period. Both corticosteroids and I.V immunoglobulin are acceptable treatments for ITP during pregnancy. We are reporting here a case of pregnant woman with ITP for the management at term who had a platelet count of 18,000 cells per cubic mm and posed a therapeutic challenge.

Idiopathic thrombocytopenic purpura was treated with intravenous methyl prednisolone 500 mg in 100 ml of normal saline over 1 hour for 2 days. Single donor platelet pools were given and emergency caesarean section was done due to fetal distress.

Keywords: *Corticosteroids; Single Donor Platelets; Apheresis; I.V Immunoglobulin; Rituximab*

Abbreviations

ITP: Idiopathic Thrombocytopenic Purpura; I.V: Intravenous; Ig: Immunoglobulin

Incidence and prevalence of ITP

Idiopathic thrombocytopenic purpura accounts for 3% of cases of thrombocytopenia during pregnancy. Discrepancies in definition and clinical criteria have led to wide range of incidence rate. It was reported to be between 0.1 and 1 case per 1000 pregnancies [1]. In a study conducted in England, prevalence was found to be 3.6% [2].

Background

Pathogenesis

Idiopathic thrombocytopenic purpura (ITP) is an immune mediated hematologic disorder caused by low platelet count. Anti-platelet antibodies particularly a set of IgG auto antibodies against one or more glycoproteins bind to the antigen on platelet surface resulting in premature destruction of platelets by the macrophages in reticular endothelial system particularly in the spleen [3]. Bleeding is unusual in ITP even with very low platelet count.

Case Report

A 25 year old primi with 39 weeks gestation was referred to the hospital in view of very low platelet count of 18,000 cells per mm3 for further management.

Patient had no previous history of ecchymosis or petechiae or purpura or bleeding gums. She had antenatal checkups regularly which were normal upto 34 weeks. Platelet count was decreased gradually from 34 weeks of gestation in spite of taking oral prednisolone. On examination all the vitals were stable. All the investigations including coagulation profile are normal except very low platelet count. The patient was stable at the time of admission. On examination her general condition was quite stable. Other major systems were examined and found to be normal. On examination per abdomen-uterus term size, relaxed, fetal heart rate was normal and regular in rythm. Ultrasound report showed that baby was in cephalic position with estimated fetal weight around 3029 +/- 230 grams, liquor was adequate and placenta was fundal and posterior corresponding to the gestational age.

On per vaginal examination, no abnormal discharge and there were no changes related to labor. Pelvis appeared to be adequate. Patient was advised the investigations including complete blood count, liver function tests, renal function tests, coagulation profile, routine urine examination and viral screening tests. Except low platelet count other investigations were found to be normal.

After admission patient was advised intravenous immunoglobulin 1 gm/kg body weight for first 2 days. Due to various limitations patient was started on I.V methylprednisolone 500 mg in 100 ml of normal saline which was given over 1 hour for 2 days.

Arrangements were made simultaneously for compatible single donor platelets in view of onset of spontaneous labor or exhibition of resistance to the medical management with methylprednisolone. On the third day patient went into spontaneous labor. On examination liquor was found to be thin meconium stained and CTG (cardiotocography) showed non-reactive trace indicating fetal hypoxia. Her platelet count was 24,000 cells per cubic mm on the same day. One single donor platelet pool transfusion was given preoperatively and emergency caesarean section was performed. Baby was delivered in cephalic position, hind waters were thick meconium stained. APGAR score of the baby was 3 at 1 minute and 8 at 5 minutes. Baby was shifted to NICU and was recovered normally. Platelet count of the baby was found to be normal immediately after the delivery and on the fifth post op day. Another single donor platelet pool was given during surgery. There were no intraoperative or postoperative hemorrhagic complications for the patient.

Patient was kept under close monitoring. Third unit of single donor platelet pool was given 12 hours postoperatively. Utmost care was taken to avoid intramuscular injections. On first postoperative day 250 mg of methyl prednisolone in 100 ml of normal saline was given and was repeated on second postoperative day. On third and fourth postoperative days 125 mg of methyl prednisolone in 100 ml of normal saline was given. On fifth postoperative day platelet count of patient was 58,000cells per mm^3. There were no post-operative complications and wound healing was normal.

Both mother and baby are discharged on sixth post-operative day. Patient was advised prednisolone 60 mg once daily orally and the platelet count was increased to 1,10,000 cells per mm^3 after 10 days.

Discussion

Management of the pregnant patient with ITP is similar to that of non-pregnant patient. In a prospective National cohort study conducted in UK it was concluded that there was no difference between asymptomatic treated and untreated cohorts in severity of the disease or outcome [4]. More aggressive measures should be taken near term to raise the platelet count to more than 50,000 cells per mm^3 to minimize intra partum and post-partum hemorrhage. Neonates born to mothers with ITP do not require treatment as they do not have bleeding complications like intracranial hemorrhage.

Intravenous immunoglobulin at the dose of 1 gm/kg body weight once daily for 2 days is considered as first line of treatment for ITP during pregnancy due to its low toxicity, Transient effects and its high cost limits the usage of immunoglobulin.

High dose methylprednisolone at the dose of 30 mg/kg body weight for 3 days has been widely used as an alternative to intravenous immunoglobulin as first line therapy for ITP patients. High dose of methyl prednisolone is effective in ITP patient refractory to intravenous immunoglobulin and conventional doses of prednisolone.

A retrospective study conducted on singleton pregnancies from two tertiary centers compared the efficacy of intravenous immunoglobulin and corticosteroids in the treatment of ITP during pregnancy. 13% of the patients treated with I.V immunoglobulin at any point of time during pregnancy reported adverse events including hemolytic anemia in 2%, headache in 6%and others including swelling, flushing, chills and rigors with light headedness were reported in 6% of this group of patients. In another group of pregnant mothers with ITP treated with corticosteroids at any point of time during pregnancy adverse events were reported in 13% including hyperglycemia requiring treatment in 9%, hyperglycemia with neonatal hypoglycemia in 2%, infections in 2% and others including insomnia, jitteriness in 2% [5]. Neonatal outcomes are similar after treatment of maternal ITP with intravenous immunoglobulin or corticosteroids.

Platelet concentrates derived from single donor platelet pool provides prophylaxis during intrapartum and postpartum periods. One single donor platelet pool provides an equivalent of 6 - 10 units of random donor platelets. It is a good alternative in emergency conditions and prior to surgery in patient refractory to conservative therapy. Advantages of single donor platelet pool include decreased disease transmission, decreased alloimmunization and superior function.

Rituximab, a monoclonal antibody can be used in ITP during pregnancy. Information about its safety in pregnancy was limited. There were no neonatal complications with rituximab [6].

Splenectomy is reserved for cases refractory to medical management [7]. It is recommended to perform splenectomy during 2nd trimester as it poses technical difficulties in the third trimester due to gravid uterus.

Conclusion

No specific action is required for ITP during pregnancy unless patient is symptomatic with platelet count less than 50,000 cells per mm^3. Close monitoring should be done.

Decreased platelet count does not dictate mode of delivery. Minimum of 50,000 cells per cubic.mm platelet count is required for normal delivery and 75,000 cells per mm^3 platelet count for caesarean section.

Short course of corticosteroids is still considered as first line management for mild to moderate platelet count in ITP during pregnancy. I.V immunoglobulins are reserved for steroid resistant and most severe cases. Splenectomy is reserved for cases resistant for medical management.

As the data regarding rituximab efficacy and safety in pregnant patients with ITP is limited further studies need to be done.

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