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# NEONATAL AUTOIMMUNE THROMBOCYTOPENIA DUE TO MATERNAL IMMUNE THROMBOCYTOPENIC PURPURA

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**A R T I C L E I N F O**

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**A B S T R A C T**

The frequency of thrombocytopenia in neonates born to mother with immune thrombocytopenia is low[1]. Mild to moderate thrombocytopenia is a common presentation[3]. About 1-5% of neonates will have platelet count less than 20,000/µl and about 1% have significant bleeding. In our case report the first twin born to mother with immune thrombocytopenia is described. The mother was diagnosed as ITP at 32 week of gestational age. The platelet count done on 2nd hour of life showed 90,000/µl. The lowest platelet count reported in this child is 8000/µl on postnatal day 3.The neonate received platelet transfusion and immunoglobin[3]. Although neonatal thrombocytopenia associated with ITP is usually mild, some neonates have severe thrombocytopenia for several days following life.



## INTRODUCTION

Platelet counts in healthy fetuses and neonates are the same as in healthy children and adults. Several studies show that >98% of term neonate whose mothers have normal platelet counts have platelets above 150.000/µL [1.] Neonatal platelet counts of 100,000 to 150,000/µL represent "mild thrombocytopenia;" platelet counts of 50,000 to 100,000/µL are considered "moderate thrombocytopenia," and platelet counts of less than 50,000/µL are considered "severe thrombocytopenia" [2].

The most common cause of neonatal autoimmune thrombocytopenia is ITP in mother. Approximately, 0.1%-0.2% of pregnancies are complicated by ITP[3]. In this report, we present a case of severe neonatal thrombocytopenia resulting from maternal ITP[13].

## CASE REPORT

This female neonate was born as a first twin to a 27 year old G2P1 mother at 34 weeks of gestation. The mother was diagnosed as ITP at 32 weeks of gestation and started with steroid therapy. Her first pregnancy was uneventful. No other family members were diagnosed with any other hematological disorders. Her minimal platelet count was 76000/µl. The twins were delivered at 34 weeks by emergency caesarian section (indication- fetal bradycardia) in a hospital outside. First twin- our case was non vigorous at birth. After bag and mask ventilation, normal heart rate, respiration, and cry was noted. The child was shifted to our hospital within hours of birth. Since maternal history of ITP was there, complete blood count including platelets and peripheral smear study was done immediately on admission. Initial platelet count was 1.1lakh/µl. peripheral smear study showed few platelets not in clumps, morphology of RBC S were normal. Except for mild jitteriness, rest of the physical examination was normal.

On day 2 of life the child showed increased lethargy and features similar to sepsis. So the complete blood count was repeated and septic work up was done. Except for the severe thrombocytopenia with a platelet count of 40000/µl, rest of the investigations done to rule out sepsis/DIC were within normal limits.

On day 3 of life child had multiple petechial lesions all over the body. No signs of intracranial /intra ventricular bleed noted. Platelet count decreased to 8000/µl. Neuro-sonogram and CT scan done to rule out intracranial hemorrhage.

Since the platelet count decreased significantly and the child was deteriorating rapidly, two units of platelet

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transfusion each 15ml/kg was done. Since there was no increase in platelet count and considering maternal ITP, IV immunoglobulin's was started at 0.5g/kg. A single dose of IV hydrocortisone at rate of 0.5mg/kg was given.

The platelet count was fluctuating between 35000/µl and 42000/µl on days 5-8 of life. Second dose IV immunoglobulin was started on day 6 of life. Total of 2.5g/kg of IVimmunoglobulin's was given. On 3rd week of life child started to appear healthy, petechial lesion stated to disappear and platelet count started to rise to 90000/µl.

During discharge on week 5 of life, the platelet count was 1.4 lakhs/µl. Neuro sonogram and MRI SCAN showed no evidence of bleeding inside skull. Follow up on subsequent weeks showed the platelet count at above 1.5laks/µl. Neurological, ophthalmic and hearing assessments were normal for the age in monthly follow up.

There is no specific diagnostic test to confirm our presumptive diagnosis of neonatal autoimmune thrombocytopenia, but ITP in the mother makes it very likely. Furthermore, neonatal alloimmune thrombocytopenia (NAIT) was excluded by ELISA testing for HPA-1a/5b antibodies. Both parents showed antigen patterns of platelet glycoproteins that are not associated with NAIT. Finally, human platelet antigen (HPA) antibodies could not be detected in the mother.

## DISCUSSION

Immune thrombocytopenia (ITP) occurs in one or two of every 1,000 pregnancies, and accounts for 5% of cases of pregnancy-associated thrombocytopenia[11]. The overall frequency of thrombocytopenia in neonates born to mothers with ITP is quite low, and about 1%- 5% of infants will have a birth platelet count less than 20000/µl, and about 1% will have significant bleeding complications[5,6]. After birth, thrombocytopenia usually worsens during the first days of life with a nadir between days 3 and 5, lasting from 10 to 60 days. In this report, the neonate had lowest platelet counts on day3. The major risk of severe thrombocytopenia is intracranial hemorrhage leading to death or neurological impairment[7]. The principal aim in managing affected infants is to prevent the deleterious consequences of severe thrombocytopenia. The frequency of intracranial hemorrhage has been estimated to be 1%–3% of cases[8].

Postnatal management of neonatal autoimmune thrombocytopenia includes IVIG, which has been found to be effective in most cases, and low-dose steroid therapy, which may be prescribed as a hemostatic agent[9]. Since the effect is delayed for 12 to 18 hours after injection, IVIG administration can only be considered when hemorrhage is not obvious. Our patients received IVIG and responded well to the treatment[10].

Platelet transfusion was used to treat bleeding and to decrease the risk of serious hemorrhages. Generally, platelet transfusions are indicated in preterm and sick infants when the platelet count is less than 50000 /µL and in otherwise healthy term infants when the platelet count approaches 30000/ µL. In this report, the child had a platelet count of 8000/µL on day 3 received a platelet transfusion due to a risk of intracranial hemorrhage and prematurity[12,14].

## CONCLUSION

Although neonatal thrombocytopenia associated with ITP is generally moderate or mild, it is important to note that some neonates may have severe thrombocytopenia for several days following delivery. Thus, neonates should be given rather close follow-up in order to prevent any potential complication, and initiate any therapy as soon as possible when and if needed.

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