Intravenous Immunoglobulin Therapy for Hyperbilirubinemia Caused by Rhesus Hemolytic Disease

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High dose intravenous immunoglobulin therapy has recently been reported to reduce the need for exchange transfusion in newborns with Rh hemolytic disease(l). We report our successful experience with this mode of therapy in one such patient.

Case Report

A nine-hour-old term small for date male newborn weighing 1850 g delivered by Cesarean section to an 'A' rhesus negative mother with an Rh antibody titre of 1:128, presented with pallor, icterus and mild hepatomegaly. Cord blood reports revealed an indirect serum bilirubin of 3.7 mg/dl, reticulocyte count 9%, platelet count 120,000/cu mm, hemoglobin (Hb) 9.3 g/dl, a positive direct Coomb's test and 'A' Rh +ve blood group. Indirect serum bilirubin at 10 hours of age was 6.7 mg/dl.

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A diagnosis of Rh hemolytic disease was made and high dose intravenous immunoglobulin (Intraglob—Biotest laboratory) 500 mg/kg (10 ml/kg) given as an infusion within an hour of arrival to the hospital after informed consent was taken from parents. Subsequent hemoglobin and bilirubin levels over the next 5 days are shown in *Table I.* Pre-and post-treatment IG levels were not estimated in the patient. Besides intermittent phototherapy, 20 ml of 'A' Rh —ve packed cells were given on two occasions within the first eight days of life. With this mode of therapy, the indirect serum bilirubin did not rise to levels above that-requiring exchange transfusion and the neonate did not require an exchange transfusion. He was readmitted at 6 weeks of age with anemia (Hb = 6.7 g/dl) and required a packed red blood cell transfusion for the same.

TABLE I— *Indirect Serum Bilirubin and Hemoglobin Levels*

Hours of age	Serum bilirubin (mg/dl)	Hemoglobin (g/dl)
(cord blood)		
0	3.7	9.3
10	6.7	10.0
16	12.2	9.2
22	12.7	8.2
32	14.2	7.0
42	13.5	6.4
54	12.8	8.8
68	12.1	11.3
76	8.2	9.9
82	5.07	11.9
120	2.87	8.0

Discussion

High dose intravenous immunoglobin (IV Ig) therapy is based on the consideration that the elimination of anti-D coated erythrocytes is mainly mediated by antibody dependent cells of the reticuloendothelial system(2). It is hypothesized that IV Ig therapy might alter the course of Rh hemolytic disease by blockade of the Fc receptor sites and resultant inhibition of hemolysis. The mechanism of erythrocyte destruction is similar to destruction of antibody sensitized platelets as in neonatal iso-immune thrombocytopenia, in which disorder beneficial effects of high dose IV Ig therapy has been reported(3,4).

The idea to modify the course of Rh hemolytic disease with high dose IV Ig is not new. In 1985, Berlin *et al.(5)* treated a woman with severe Rh isoimmunization with this form of therapy with partial success. Recent reports about the efficacy of maternal IV Ig therapy for management of Rh hemolytic disease are contradictory(6,7).

The bilirubin levels in our case were closely monitored for 5 days and did not cross critical levels necessitating exchange transfusion. With the cord blood reports and immediate increase in serum bilirubin seen at 10 hours, this neonate was heading for an exchange transfusion. However, following IV Ig the subsequent increase in bilirubin values was slow and easily controlled by phototherapy. We believe that had he not received IV Ig he would have required an exchange transfusion. Rubo *et al.*(l) in a carefully designed double blinded controlled study have clearly demonstrated the beneficial effects of high dose IV Ig therapy in modulating the course of hyperbilirubinemia in Rh hemolytic disease.

Exchange transfusion at many centres still has a significant morbidity and mortality(8,9). IV Ig therapy cost this patient Rs 1,200 and did not produce any notable adverse effect. The cost of disposable exchange transfusion sets and the procedure cost in many private hospitals exceeds the cost of IV Ig. The possible risks for neonates treated with TV Ig seems low, as this therapy has been advocated for other indications, including the prevention of bacterial sepsis in both term and preterm neonates(l0).

Although, this form of therapy reduces the need of an invasive procedure like an exchange transfusion our concern is the development of late anemia due to ongoing hemolysis that may require packed red cells transfusion. The optimal dose and the most efficacious number of infusions remains to be determined. It may also be worthwhile estimating pre-and post-treatment Ig levels to determine its effectivity. We hope some of these questions will be answered if a few trials are conducted in our setting.

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Toxic Synovitis of the Hip An Unusual Complication of Neonatal Salmonellosis

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Salmonella infections in young infants are more likely to disseminate and cause metastatic complications. Compared with other serotypes, *S. paratyphi B (S. schottmuelleri)* is an uncommon human pathogen(l). Toxic synovitis of the hip refers to a transient, nonspecific, unilateral inflammatory arthritis involving the hip joint(2). It is a clinical diagnosis which is confirmed by excluding other causes for joint symptoms. In this communication, we describe a case of *S. paratyphi B* septicemia in a neonate presenting as painful hip which turned out to be toxic synovitis.

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Case Report

A 2700 g male infant was born at term by Cesarean section to a first gravida eclamptic mother. He sustained birth asphyxia and his Apgar scores were 1 and 8 at 1 and 5 min, respectively. There was no evidence of birth trauma or congenital dislocation of the hip. He was given supportive management and recovered uneventfully. The baby was not subjected to femoral venipuncture or umbilical catheterization