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Intravenous immunoglobulin in ABO and Rh hemolytic diseases of newborn

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Abstract

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Objective: To evaluate whether the use of intravenous immunoglobulin in newborn infants with isoimmune hemolytic jaundice due to Rh and ABO incompatibility is an effective treatment in reducing the need for exchange transfusion. **Methods:** This study included all direct Coombs' test positive Rh and ABO isoimmunized babies, who admitted in the Neonatal Intensive Care Unit of Ghaem Hospital of Mashhad University of Medical Sciences, Iran, from October 2003 to October 2004. Significant hyperbilirubinemia was defined as rising by 0.5 mg/dl per hour. Babies were randomly assigned to received phototherapy with intravenous immunoglobulin (IVIg) 0.5 g/kg over 4 hours, every 12 hours for 3 doses (study group) or phototherapy alone (control group). Exchange transfusion was performed in any group if serum bilirubin exceeded 20mg/dl or rose 1mg/dl/h. **Results:** A total of 34 babies were eligible for this study (17 babies in each group). The number of exchange transfusion, duration of phototherapy and hospitalization days, were significant shorter in the study group versus control group. When we analyzed the outcome results in ABO and Rh hemolytic disease separately, the efficacy of IVIg was significantly better in Rh versus ABO isoimmunization. Late anemia was more common in IVIg group 11.8% versus 0%, p=0.48. Adverse effects were not observed during IVIg administration. **Conclusion:** Administration of IVIg to newborns with significantly hyperbilirubinemia due to Rh hemolytic disease reduced the need for exchange transfusion but in ABO hemolytic disease there was not significant difference between IVIg and double surface blue light phototherapy.

Indexed Keywords

EMTREE drug terms: bilirubin; immunoglobulin

EMTREE medical terms: allergic reaction; anemia; article; bilirubin blood level; blood disease; blood group ABO incompatibility; blood group Rh; clinical article; clinical trial; controlled clinical trial; controlled study; Coombs test; drug efficacy; exchange blood transfusion; female; hemolysis; human; hyperbilirubinemia; infant; Iran; length of stay; male; newborn; newborn hemolytic disease; outcome assessment; phototherapy; randomized controlled trial; rhesus incompatibility; rhesus isoimmunization; treatment duration

Chemicals and CAS Registry Numbers: bilirubin, 18422-02-1, 635-65-4; immunoglobulin, 9007-83-4

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