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SCIENTIFIC LETTER

Combined Anti e and Anti C Rh Isoimmunisation and Severe Hyperbilirubinemia

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To the Editor: Hemolytic disease of newborn (HDN) results when maternal antibodies formed after sensitization to fetal RBCs cross placenta and produce hemolysis [1]. Here we report a rare case in which the newborn presented with severe hyperbilirubinemia due to anti e and anti C isoimmunisation.

A preterm (35 wk), appropriate for gestational age (AGA) (2750 g) male baby, born to a G4A2L1 mother, was admitted at 36 h of life for jaundice. On examination, infant had icterus but no pallor, splenomegaly, cephalhematoma or subgaleal bleed. Total serum bilirubin (TSB) was 13.7 mg/dl (direct bilirubin 1 mg/dl), hemoglobin 17 g/dl, reticulocyte count 8.6 % and peripheral smear showed macrocytic, normochromic RBCs with target cells, burr cells, spherocytes and nucleated RBC. Baby and mother were B positive. Direct coomb's test (DCT) was strongly positive (3+) in the newborn and Indirect coomb's test (ICT) (postnatal) in the mother. Baby was treated with phototherapy for 48 h and was shifted to mother's side. Baby had rebound jaundice on 6th day of life with a Total serum bilirubin (TSB) of 29.6 mg/dl and hematocrit of 36 % with significant weight loss (12 %). The infant was managed with phototherapy for 96 h. Antibody identification by 3 and 11 cell panel indicated presence of anti 'e' and anti 'C' antibodies in the newborn.

With the use of Rh immune globulin, the incidence of Rh isoimmunisation has decreased but isoimmunisation due to other blood group antigens is increasingly being reported. The maternal antibodies can be directed against varied RBC antigens including anti A and anti B of ABO; anti C, anti c, anti D, anti d, anti E, anti e of Rh; anti K1, anti K2, anti K3 and anti K4 antibodies of Kell systems [2]. The index newborn is a very rare case report of isoimmunisation due combined anti e and anti C antibodies. Minor blood group incompatibility in newborn needs to be considered when acute severe jaundice presents on day 1 or day 2 of life and when there is an acute severe hemolysis as in this index newborn. Phototherapy and exchange transfusion remain the standard treatment modalities in these newborns with severe jaundice. However, considering similar pathophysiology to Rh isoimmunisation, early IVIG may prevent acute and severe onset of jaundice [3].

Acute severe jaundice in the newborn in the first week of life should always be evaluated for immune hemolysis. DCT should be done in all newborns with severe jaundice even when there is no setting for Rh and ABO isoimmunisation [4].

Conflict of Interest None.

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