

Effects of early human recombinant erythropoietin therapy on the transfusion in healthy preterm infants

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[View references \(^ ^\)](#)

Abstract

Objective: Early recombinant erythropoietin therapy and iron therapy would decrease the need for red blood cells transfusions and prevents anemia of prematurity. **Methods:** Fifty-eight preterm infants in newborn services at Ghaem Medical Center randomly were assigned, among them 18 patients were excluded. A total of 40 preterm infants with gestational age 28-34 weeks, birth weight 1000-1700 g followed the study: 20 infants in treatment group and 20 infants in control group were randomized to treatment (rhu EPO, 200 u per kg, per week, 3 times weekly, subcutaneous) and control (no treatment). Therapy was initiated 4 days after birth and continued throughout the 4 weeks. All infants on enteral feeds received supplements: iron 3 mg/kg/d, vitamins and folat. Complete blood cells and reticulocyte counts were measured weekly. Transfusions and phlebotomy data were recorded. Statistical significance was determined by chi-square test, student t test and Mann-Whitney. A P value of < 0.05 was considered statistically significant. **Results:** The reticulocyte counts were higher in treated infants during the study (p: 0.009). Final hematocrits were higher in treated infants (p: 0.02). The volume of packed red blood cells transfusions milliliter per infant significantly reduced (p: 0.005), the average number of transfusion per infant was also lower for treated infant than control [3 (10%) vs 4 (20%) respectively]. No adverse effects of EPO or supplemental iron occurred. **Conclusion:** The combination of early rhu EPO and iron as administered in the present study stimulated erythropoiesis and decreased red blood cells transfusion in premature infants who were 1000-1700 g at birth. The enrollments of the larger and healthier preterm infants, who are at lower risk for transfusion, are limitation of the present study. © 2008 Dr. K C Chaudhuri Foundation.

Author keywords

Anemia; Erythropoietin; Neonates; Prematurity; Recombinant

Indexed Keywords

EMTREE drug terms: folic acid; iron; recombinant erythropoietin; vitamin

EMTREE medical terms: adverse drug reaction; anemia; article; birth weight; blood cell count; clinical trial; controlled clinical trial; controlled study; diet supplementation; enteric feeding; erythrocyte; erythrocyte concentrate; erythrocyte transfusion; erythropoiesis; gestational age; hematocrit; human; infant; iron therapy; major clinical study; phlebotomy; prematurity; randomized controlled trial; reticulocyte count; risk factor; stimulation; therapy effect; treatment duration; treatment outcome

MeSH: Anemia, Neonatal; Erythrocyte Transfusion; Erythropoiesis; Erythropoietin, Recombinant; Female; Humans; Infant, Newborn; Infant, Premature; Iron; Male

Medline is the source for the MeSH terms of this document.

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