evalution of reconbinant human erytropoietin and the use ofold unwashed transfusionin mangement of anenia of prematarity

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The anemia of prematurity is multifactorial; however, the inappropriately low serum level of erythropoietin is a major determining factor. Erythrocyte transfusion can ameliorate symptoms of anemia of prematurity, but red cell transfusion posses considerable risks to small infants. Recombinant human erythropoietin has been -used, recently, to treat the anemia of prematurity.Our study was conducted on sixty five premature infants fulfilling the following criteria : 1. Gestational age at birth less than 33 weeks; 2. Absence of hemolytic disease; 3. Absence of mtraventricular hemorrhage 4. Infants are symptom-free i. e. relatively healthy preterm with high risk of requiring transfusion for the anemia ; 5. Absence of prenatal and natal predisposing factors for anemia.The preterm infants were given rHu - Epo in a dose of 200units/kg/day subcutaneously three times per week. At the same time they were given oral iron and vitamin E supplements. The treatment groups were compared to groups, age and sex matched, received blood transfusion only without the hormone.Our results showed that rHu-Epo therapy in anemicpreterm infants caused a significant increase in the reticulocyte count and the postnatal decline in hemoglobin and hematocrit was significantly reduced. We also found that the need for blood transfusion was also reduced in the rHu- Epo — treated group than the other groups who did not receive the hormone. The rHu -Epo treatment was well tolerated and no immediate adverseeffects were recorded.We also found that the use of old unwashed red cells from single donor in treatment of anemia of prematurity reduce repeated donor transfusions. Also there is non-significant changes in pH, serum K+, serum CC in preterm babies used old blood stored up to 42 days as the small amounts of transfused blood make the changes in the blood chemistry insignificant.Infants who underwent transfusion were given packed, erythrocyte, 10 mUkg over 3 hours period. All the transfused blood was 0 Rh negative. Typing and cross matching procedures were employed for all infants. We used single blood donor bag attached to three satellite bags for groups received old unwashed blood. Routine follow up for assessment of growth and development was conducted at a postnatal age of 12 weeks.from the present study, we can conclude that:RHu- Epo therapy is effective in treatment of anemia ofprematurity.2.RHu - Epo therapy is more efficient when given torelatively stable preterm infants.3.RHu - Epo therapy reduced the need for blood transfusionin anemic premature infants.4.RHu - Epo therapy is an alternative to erythrocytetransfusion in neonates with

symptomatic anemia of prematurity.5.RHu - Epo therapy is devoid of major adverse effects.6.Cost effectiveness of RHu-Epo therapy is feasible if compared to cost of blood transfusion Recommendations :Future studies are strongly recommended to:•Determine the age of initiation of therapy.•Determine the late adverse effects.•Determine the optimal dosing interval and the duration of therapy.•Asses the effect of rHu- Epo treatment on the onset of theendogenous erythropoietin production• Determine whether ”rescue” treatment beginning at 2-3 weeks of age or ” prophylactic” treatment started soon after birth is more effective.