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Placental umbilical cord whole blood transfusion to combat anemia in the background of advanced rheumatoid arthritis and emaciation and its potential role as immuno adjuvant therapy

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Among the most debilitating disabilities of the present day, rheumatoid arthritis has a significant position affecting almost 0.8% of Western population and about 7 million in Indian population (2010). Anemia is a very common comorbidity of rheumatoid arthritis. Like anemia of chronic illness, it is caused by defective iron metabolism, coexistent intestinal parasites, steroids and NSAIDs, Methotrexate and Sulphasalazine. If the hemoglobin is 8 g/dl or less, blood transfusion is recommended along with replacement for iron deficiency, but in case of rheumatoid arthritis anemia does not effectively utilize iron to form hemoglobin. Because of higher proportion of fetal hemoglobin (about 70%), cytokines and growth factors, being hypo antigenic nature, we hereby propose that human umbilical cord blood has properties comparable (and at times superior) to adult blood transfusion. 83 units (45 ml-137 ml, mean packed cell volume 44.3±2.1 SD, mean hemoglobin concentration 16.1 g/dl±1.5 g/dl SD) of placental umbilical cord whole blood were transfused to 32 informed consenting patients with advanced rheumatoid arthritis, who had hemoglobin of 8 g/dl or less. The patients received two to six units of freshly collected placental umbilical cord blood without encountering any recognizable/visible clinical, immunological or non-immunological reactions. Peripheral blood hematopoietic stem cell (CD34+) estimation revealed a rise from the pre-transfusion base level (0.092%) by 7 to 10 days, varying from 2.03 to 22%. Mean rise in hemoglobin with 2 units cord blood transfusions varied from 0.5 gm/dl to 1.5 gm/dl after 72 hours and about 0.2 gm/dl to 0.9 gm/dl after 7-10 days from transfusion. In our study, we conclude the feasibility of transfusion of whole cord blood in patients with anemia in rheumatoid arthritis, with no discernible immunological reactions so far in last 19 years.

Biography

Suvodip Chakrabarty has completed his MBBS and MPhil in Regenerative Medicine.

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