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Placental umbilical cord blood transfusion: A new method of treatment of diabetes and microalbuminuria in the background of anaemia

Introduction: Diabetes mellitus is the commonest endocrine disease in all population and all age groups. It is caused by inadequate insulin secretion or impaired insulin action or both. Anaemia is a common accompaniment of diabetes particularly in those with albuminuria indicating reduced renal function or tubulointerstitial disease. Microalbuminuria is defined as excretion of 30 to 300 mg albumin per 24 hours urine or 30 to 300 mcg albumin/mg of creatinine on 2 to 3 urine collection. Microalbuminuria arises from the increased passage of albumin through glomerular filtration barrier which require ultrastructural change rather than alteration in filtration rate. The loss of systemic endothelial glycocalyx a protein rich surface layer causes the endothelial dysfunction. Cord blood contain Endothelial Progenitor Cells (EPC). EPC may be directly engrafting and regenerating or seem to be depended on paracrine effect. Microvesicles and mRNA have been found to mediate proangiogenic and regenerative effect of EPC on endothelium.

Method: Cord blood (screened for HIV 1 & II hepatitis B, C syphilis, malaria & CMV) are rich in growth factor, cytokine & progenitor cells. It can be used as substitute for adult blood. In most cases cord blood was transfused immediately and in rare cases within 72 hrs of collection. It included 42 informed consenting patients They were randomised into 2 groups Inclusion criteria: Hgb percent < 8 gm/dl, type 2 diabetes, fasting sugar > 200 mg/dl Both groups were under antidiabetic drug, ACE inhibitor & antidy lipidemic

- Group A Control Cases N = 20 were transfused adult blood 4 to 5 units
- Group B Study Cases N = 22 were transfused umbilical cord blood 4 to 5 units.

Results: Hgb% was assessed after 72 hrs in both groups. Microalbuminuria was assessed after 3 months. In Group A microalbuminuria came down to 150+/- 18mcg from 189

& Hgb increased by 1.2 to 1.4. In Group B it came to 99+/- 10mcg from 192 and Hgb increased by .8 to 1.8. No reactions were found, clinical or immunological.

Conclusion: Cord blood corrected microalbuminuria more effectively than adult blood with well sustenance.

Biography

Dr Sipra Saha(Kundu) d/o Dr Panchanan Saha (ex-professor in Chest Medicine) completed her .Phil and Fellowship in Stem Cell and Regenerative Medicine from School of Tropical Medicine, Kolkata. She has presented posters on Stem Cell Treatment of Immunosuppressed in rominent gatherings like the Asiatic Society of Kolkata under prof Dr. Niranjana Bhattacharya and Dr. Iain Gluckman, stalwarts of the 5 cord blood pioneers worldwide. She graduated as a doctor from Medical College and Hospital Kolkata, India in Medicine in 1986. After which she served as a Medical Officer in Rural Health Service Gabberia State General Hospital India and Clinical Pathologist Medical College and Hospital Kolkata India. She has been serving as Medical Officer at Diamond Harbour District Medical College Hospital since 2016.



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