

Karyotyping as a quality check for stem cell banking

Bani B. Ganguly

MGM Institute of Health Sciences, India

Umbilical cord blood (UCB) stem cell therapy has become the choice of cell generation therapy of several disorders which otherwise are not curable. In India, private banking facilities have been established for future use of the UCB cells. As a measure of quality control, testing is carried out on infection status, Rh and blood group. Presently such banking is a very personalized approach where a legal contract is generated with banking organization and parents. Counseling is catered to families mostly on use of UCB stem cells and terms and condition of banking. It has been observed, UCB cells of Down syndrome is also being banked. Therefore, the question of risk of therapeutic failure due to engraftment of genetically compromised cells came into mind. Incidence of genetic abnormality at population level is known. However, literature survey has collected a little information about the approach of genetic testing before stem cells transplantation. Therefore, it is felt that the study of genetic abnormality in UCB stem cells before and through cryo-preservation would be essential. The measurement of genomic karyotyping, spontaneous aberrations, viability, proliferation rate, etc. in M1 and M2 cells of placenta would be useful. The result will establish the importance of genetic counseling and genetic testing as a prerequisite practice in commercial UCB stem cell banking. While information about necessity of genetic testing before banking and/or receiving transplantation will help public, this will also help banking organizations to maintain a genetic certificate and family profile of any banked UCB specimen.

Biography

Bani B. Ganguly has completed Ph.D. at the age of 28 years from University of Calcutta, India and postdoctoral studies from Indian Statistical Institute, Calcutta and Bhabha Atomic Research Center, Mumbai, India. Currently she is directing genetic diagnosis and research at MGM Institute of Health Sciences, India. She has received national and international awards, and has so far published more than 50 papers in reputed journals and serving as guest editor for JOGR of Blackwell Publishing Inc.

mgmgeneticlab@yahoo.com