

9<sup>th</sup> International Conference and Exhibition on

# TISSUE ENGINEERING AND BIOBANKING

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# TISSUE SCIENCE AND REGENERATIVE MEDICINE

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## Cord blood banking for transplantation and regenerative medicine

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Collection and banking of umbilical cord blood (UCBs) can provide unlimited source of ethnically diverse donors. The main limitation factor for use of UCBs as a source of hematopoietic progenitors for transplantation is cell dose. The engraftment outcome of UCB transplantation is highly dependent on nucleated cell number of units. It would be useful to predict CB cell content using information of donor-related variables before cell processing. Banked unrelated donor UCBs has improved access to hematopoietic stem cell transplantation for patients without a suitably matched donor. In a resource-limited environment, ensuring that the public inventory is enriched with high-quality CBUs addressing the needs of a diverse group of patients is a priority. Identification of donor characteristics correlating with higher CBU quality could guide operational strategies to increase the yield of banked high-quality CBUs. In contrast family-directed CB collection and storage requires different procedures in order to obtain high-quality products. This approach is clinically indicated and validated in families where the mother is pregnant and has an existing child or has a known risk of having a child affected by a disease which can be cured by allogeneic HSCT. It would be useful to predict CB cell content using information of donor-related variables before processing. In this study, CBs were obtained from 3297 single-birth term deliveries in 3 hospitals affiliated to Tehran University of Medical Sciences from January 1998 to June 2016. Up to August 2016, 67 units have been used in transplantation for patients with malignant and non-malignant disorders. The attempt has been made to find factors which have significant effects on quality of CB units, including CB volume, TNCs, and CD34+ cell counts.

### Biography

Ghashghaie A is expert in bioprocessing and cryopreservation of cord blood units. She is also skilled in expansion and culture of mesenchymal stromal cells which are then used for GVHD treatment and regenerative medicine. She has worked in Pasteur Institute of Iran as a Master's student and has more than 10 years' experience in HLA typing especially by PCR-SSP method. She has become self-made by years of experience in research, training and supervising in hospital, BMT laboratory and Stem Cell Research Center. Hematology\_Oncology & Stem Cell Transplantation Institute is been founded 25 years ago and been performing/running SC transplants for both malignant and non-malignant patients from around the country. GVHD as the major life-threatening result of engraftment is the most studied risk factor under several research projects by academic members, Master's and PhD students and fellowships in this institute. This study has been focusing on quality of Cord blood units and their utilization in SC transplant aftermaths.

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