

Pediatric Hematopoietic Stem Cell Transplantation

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Abstract:

The introduction and evolution of hematopoietic stem cell transplantation (HSCT) could be traced back to 1950s, to the studies on interactions among irradiation, covering spleen and bone marrow from it and injection of bone marrow cells. Today, HSCT is considered a well-established, effective and promising means of therapy for various malignant and non-malignant medical conditions, both in children and adult patients and it is no longer restricted by limited sources of HSCs, donor pools or explicit need for matched family members. Annual number of pediatric HSCTs has been increasing over past two decades and while its growth has become steadier since 2002.

Household size and consanguineous marriages in the Middle East means that many pediatric candidates of HSCT can suitable donors among their siblings; however, both of these contributing factors are gradually declining in the region. Iran has been experiencing slower population growth and smaller household sizes since twenty years ago. Hence, according to statements on EMBMT website, Iranian Stem Cell Donor Program (ISCDP) has started its activity in 2010 and has joined Bone Marrow Donors Worldwide (BMDW), in an effort to maximize chances of finding HLA-matched donors in countries in the Eastern Mediterranean Regional Office (EMRO) of World Health Organization (WHO) and beyond.

Total body irradiation (TBI) has been used in conditioning from the beginnings of HSCT; however various experiments with non-TBI conditioning regimens have shown an alternative path. Although numerous studies on pediatric HSCT have been published, most patients have had a component of irradiation in their regimens. Long-term detrimental consequences of HSCT, particularly those attributed to TBI, have been continuously studied; endocrine and metabolic abnormalities, growth retardation and short stature and neurocognitive sequel are but a few of these sequel , especially among pediatric recipients. Compared to other studies, non-malignant indications for HSCT constitute a greater proportion of performed HSCTs in Iran; inherited abnormalities of RBCs and thalassemia in particular are responsible for this disparity in part.

Keyword: Hematopoietic Stem Cell, Transplantation.

Oral Presentation

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