Current Status of Hematopoietic Stem Cell Transplantation (HSCT) in India

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Abstract

Though the first Indian HSCT was done at Tata Memorial Hospital way back in 1983, even today HSCT programme in India is in its infancy. In the first 28 years only 4015 transplants have been done. In USA (population 307 million), 16,974 HSCTs were done in 2008. In comparison, in India with a population of 1.2 billion, 438 transplants were done in 2008. Presently, there are approximately 25 centers undertaking HSCT in India.

As opposed to majority of transplants done worldwide being autologous, 60% of transplants done in India are allogeneic. The main indications for allogeneic transplants were Thalassemia Major 26% & acute leukemias 33%; and for autologous transplants were multiple myeloma 50% & lymphomas 31%. Most of the allogeneic HSCTs in India are now done with PBSC as source of stem cells. However, as compared to developed countries, still most donors in India are HLA matched siblings. Very few haplo, MUD or cord blood transplants have been done. Major transplant centers like CMC, Vellore & TMH, Mumbai have started venturing in this field. However, the extremely high cost of such transplant is still a major source of hindrance.

Though we are improving by leaps and bounds, one of the major reasons for slow progress in the field of HSCT in India is the limited number of Tertiary Cancer Centers and shortage of trained personnel, both medical and paramedical, in this field. Cost is also a major issue. Though the cost of transplant in India is around USD $20,000 which is a fraction of the cost for such a transplant in USA, this is still beyond the reach of the majority of patients in India, which has a per capita GDP of $3608 (as opposed $48,665 of USA & 34,646 of Japan). With no medical insurance system, most patients have to pay from their pockets.

Most of the SCTs done in India are done as part of routine "service". Except at CMC Vellore, hardly any "research" is being undertaken. This also reflects in the fact that a PubMed search for "HSCT & India" yielded only 111 publications. Also most published work is in the preliminary stage and it may take some time before the translational research reaches to the bedside. HSCT is by no means an ideal mode of therapy. What we need in the future is better way to decrease GVHD without affecting the GVL effect. More use of simpler cellular therapies like dendritic cells, mesenchymal stem cells, NK cells, immunomodulators etc. to achieve this and improve outcome of malignant conditions, and hopefully limit the use of HSCT only for non-malignant conditions!