Umbilical Cord Blood Transplant Offers Additional Donor Source

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Northwestern Medicine’s Hematopoietic Stem Cell Transplant (HSCT) program has been performing stem cell transplants since 1987. Initially performing primarily autologous (self) transplants and a small number of related allogeneic transplants for patients with various blood cancers, the HSCT program started offering unrelated allogeneic transplants to patients that required a donor in 2001.

According to the National Marrow Donor Program (NMDP), 30% of patients requiring a donor transplant are able to receive a matched related donor HSCT. Seventy percent of patients requiring an HSCT will need an unrelated donor option as the source of a new immune system. Although the NMDP has millions of registered donors willing to donate, not every patient will find a live donor. Umbilical cord blood units (CBUs) offer another donor source rich in hematopoietic stem cells needed to rescue the recipient from chemotherapy and radiation and provide a new immune system for the patient. To offer the best CBUs for our patients we have created the HSCT CBU committee.

This multi-disciplinary HSCT CBU committee includes pre-transplant nurse coordinators, an attending physician with special interest in CBUs, scientists from our HLA laboratory, medical technologists from the Cell Therapy Processing Facility (CTPF), data coordinators, and advanced practice nurses specializing in the care of patients during and after HSCT.

The HSCT CBU committee reviews the CBU options for each patient always considering the patient’s diagnosis, disease status, HLA match grade to the CBUs, CBU total nucleated cell count (TNC) and RBC%, as well as antibody testing. Two CBUs are required for each adult recipient CBU HSCT in our program. The HSCT CBU committee recommends 4 CBUs, 2 which will be requested for shipment and infusion. The second two remaining CBUs will be held at the Cord Blood Bank as back-up until the Cord Blood Bank is given notice that the units are no longer required.

CBUs are more quickly accessible than donor stem cells. CBUs are frozen and ready to be delivered to our transplant center within one week. Timing is everything when an AML patient is in a complete remission and there is a concern for relapse.

The HSCT CBU committee is focused on improvements in HLA typing methods, a better understanding of acceptable parameters for CBU selection, continued education in CBU selection, CBU infusion protocols, and post transplant care procedures as well as research opportunities.