THE PATIENT EXPERIENCE

THE FIVE STEP PROCESS

Step 1: Finding a Match – Not everyone can donate bone marrow or peripheral blood stem cells. Careful screening ensures cells will closely match those of the patient. Siblings are most likely to be suitable donors, fully matching about 30 percent of the time. When there is no sibling match, IBMT participates in the National Marrow Donor Program to help patients find an acceptable unrelated donor from a worldwide donor network. Patients who cannot find a full match will be considered for a halfmatched (haploidentical) transplant.

Step 2: Harvesting – When stem cells are harvested from bone marrow, the donor is given general anesthesia while trained physicians and assistants collect marrow from the patient's or donor's hip bones. Alternately, while stem cells do not usually circulate in the blood stream, they can be mobilized from the bone marrow into the blood with a combination of chemotherapy and/or growth factors using an apheresis machine to filter stem cells out of the bloodstream. Collection begins when the white blood count becomes greater than 5,000 cells/mm3. This process usually takes about four hours per day for several days.

Step 3: Creating Venous Access – To increase patient comfort for the numerous required blood tests and for the efficient administration of several drugs (including high-dose chemotherapy), a catheter is surgically placed in a large vein in the patient's chest for continuous venous access. This device is called a "central line" or "central venous access device." A special venous access device may be needed to collect stem cells by apheresis, and then used during all other aspects of transplant treatment.

Step 4: Stem Cell Infusion – After the patient completes radiation and/or chemotherapy, IBMT professionals return stem cells to the patient by simply infusing them through the central venous catheter. This infusion procedure lasts approximately 30 minutes to two hours. Our nurses constantly monitor the patient's condition during the transplant for signs of fever or adverse reaction.

Step 5: Monitoring – During the first few weeks following the transplant, the new stem cells must "engraft," or begin to function and thrive within the patient's body. Until this occurs, the patient is highly susceptible to infection and is closely monitored on a daily basis. Patients with high fevers or other complications are admitted to the inpatient unit for continuous surveillance. Those who respond favorably may return home or to a hotel until recovery is complete.

For an autologous transplant, peripheral blood stem cells are collected from the patient's own bloodstream. The collected cells are then frozen and preserved for reinfusion following chemotherapy/radiation treatment. Removing stem cells before radiation and/or high-dose chemotherapy treatment protects these cells from the therapy's potentially permanent damaging effects.

CAR T-Cell therapy is a targeted individualized immunotherapy that has been FDA approved for the use in relapsed diffuse large B-cell lymphomas, mantle cell lymphoma, follicular lymphoma and lymphoblastic leukemia (ALL), and multiple myeloma. This process requires a patient's t-cells to be processed and genetically modified to help fight the cancer cells.

For an allogenic transplant, the patient undergoes high-dose radiation and/or chemotherapy with the goal of destroying his or her diseased bone marrow. They are then "rescued" with marrow (or peripheral blood stem cells) donated by a healthy person who is either a family member ("related") or anonymous volunteer ("unrelated").

Both autologous and allogenic transplants have the potential to cure many diseases not otherwise curable with standard-dose treatment. In addition, these procedures have proven to be effective for patients who have undergone standard-dose therapy but have suffered a recurrence of their disease.



OUTPATIENT TREATMENT

One of the major advantages of the IBMT program is that IBMT patients may be able to undergo stem cell collection and transplant procedures on an outpatient basis with patients being maintained in the comfort of their home, or in a nearby home-like environment. The decision to pursue outpatient transplant services requires patient and family commitment to the procedure, appropriate insurance coverage, medical and psychosocial circumstances, and the availability of someone to stay with them during treatment.This person does not require any medical experience.

The outpatient model has been used successfully by IBMT for more than 15 years. Patients undergoing active treatment are seen daily by our physicians and nurses in the outpatient IBMT clinic as they receive all necessary care. Patients living within a one hour radius of our facilities are allowed to go home at night. Those living at greater distances may stay at local accommodations such as hotels (five minutes away). All patients undergoing outpatient treatments must have reliable transportation to and from the clinic to attend daily follow-up visits for a period of three to five weeks, after which follow-up visits occur less frequently.

All outpatient and inpatient medical care is provided by highly professional and courteous transplant-trained staff. Patients are seen every day by dedicated transplant physicians and nurses, and other transplant team members as needed.

Each day, the transplant team carefully evaluates each patient's overall condition to decide how their needs are going to be met best. Most routine needs include blood transfusions, fluids and electrolyte solutions.

Anti-emetics and antibiotics are all administered while in the clinic. If needed, these can be administered by using a backpack with a battery powered infusion pump, which patients take with them following their visit. This allows patients to receive this routine support as an outpatient.

To prevent infection, outpatients receive extensive instructions, take oral prophylactic antibiotics, and follow the same precautions used for inpatients regarding their environment and diet.

Patients needing to be admitted are usually directly admitted to our inpatient transplant unit, thereby avoiding a visit to the emergency department. This eliminates any delay in treatment of the unique needs of neutropenic patients. We have found that most patients and their families prefer this approach to care and express a high degree of satisfaction upon completion.

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