

Bone Marrow Transplant

What is a bone marrow transplant?

A bone marrow transplant is a procedure to take healthy stem cells from a bone marrow donor, and inject them into someone with abnormal or damaged cells.

Who can benefit from a bone marrow transplant?

The stem cells produced by bone marrow develop into blood cells, so it is essential that they remain healthy to avoid illness. If individuals do become ill from unhealthy stem cells, they may require a bone marrow transplant. These illnesses may include leukemia, Hodgkin's disease, aplastic anemia and multiple myeloma – among others.

Procedure

There are three main types of bone marrow transplant: allogeneic (cells from a relative or unrelated donor), autologous (cells from the patient prior to therapy, e.g. chemotherapy), and syngenic (cells from an identical twin). In terms of the actual transplant, there are three stages to the procedure. Firstly, bone marrow stem cells are harvested. If this is done as an autologous transplant, bone marrow is usually harvested from the hip bone. The second stage of bone marrow transplant is known as 'conditioning'. Before this takes place a catheter (tube) is inserted into one of the veins that lies close to the heart - known as the central line. This avoids the need for injections as medication and blood samples can be administered or taken through the tube. The patient then undergoes a course of chemotherapy and/or radiation to eliminate the remaining damaged stem cells – this is the 'conditioning' process. Finally, a few days after the conditioning, the new, healthy stem cells are then injected into the central line (the patient is awake during the transfer). The cells can then begin to graft onto the bone and produce new cells. You will be placed on a course of antibiotics to help increase resistance to any infection, and may be given medication to encourage the bone marrow to produce stem cells at an exaggerated rate.

Recovery

Because you need to be monitored closely following the bone marrow transplant, you will need to stay in hospital for 3-4 weeks. Full recovery can take between 3-6 months, and you will need to see your physician or GP regular check-ups, who will also advise you on returning to work and exercise and taking your immunosuppressant medication. You may experience some side effects following the transplant, including tiredness, hair loss, diarrhea and nausea, which can last for several weeks.

Risks

Complications involving the bone marrow transplant include bleeding and infection. Venous occlusive disease is also a risk, meaning the blood vessels in the liver become blocked and swell, preventing it from removing waste properly. This can cause pain and weight gain. Graft versus host disease (GVHD) is another possible complication of an allogeneic bone marrow transplant. This is when the new immune cells in the bone marrow attack the patient's body tissue, and can be fatal.