

Stem Cell Transplants

The Parkside Stem Cell Programme

Since 2004, seventeen haemato-oncology patients have undergone Stem Cell Transplants at Parkside Bone Marrow Transplant Centre or, more specifically, Autotransplant where they have received their own stem cells back.

The programme was instigated and is overseen by head of department Professor Ray Powles, and is an established part of the treatment pathway for patients presenting with Myeloma and Leukaemia.

The process, although complex and involving a large multidisciplinary team over a number of sites, has evolved to become a smooth and well-supported journey for the patient, and has had a zero procedure-related mortality rate.

Suitable patients will receive induction chemotherapy and, if necessary, radiotherapy, with the aim of achieving remission status prior to transplant for optimum effect, although this is not mandatory.

Each patient, at the appropriate juncture, has a protocol compiled by the multidisciplinary team establishing parameters, treatments and dates. They will have cardiac and renal function evaluation, full blood analysis and dental check and, to ensure appropriate storage of their stem cells, patients will have an extensive virology screen.

Any patient whose renal or cardiac function, for example, is compromised, will be reviewed by an appropriate specialist who assists in deciding protocol amendments, and who will continue to monitor the patient throughout the process.

Protocols, once agreed and checked by the lead consultant, are distributed to all the departments and clinicians involved in the patient pathway.

When it has been established that they will benefit from stem cell treatment, the patient must have their cells harvested; this process involves initially mobilising the stem cells from the bone marrow into the peripheral circulation. In the case of myeloma patients by administering a

single dose of chemotherapy (Cyclophosphamide), which depresses the marrow initially, resulting in a period of more active cell growth, and is usually done on a day case basis. Five days later, the patient begins a course of G-CSF (granulocyte colony stimulating factor) injections, which continues up until, and if necessary during, harvesting. Patients with leukaemia do not require Cyclophosphamide prior to G-CSF, during their induction.

The process of taking off the stem cells is undertaken off-site at Kings College Hospital (KCH) in their Apheresis Unit, taking on average, two six-hour days. The stem cells are spun off from the peripheral circulation, the harvest is quantified, cells are then frozen and stored in liquid nitrogen. Occasionally, the harvest is inadequate and the patient is required to undergo the process a second time.

The return of the stem cells takes place during a period of, typically, between two to four weeks as an inpatient at Parkside (the average stay to date has been 16 days). High dose chemotherapy (Melphalan) is given via a central line on the day after admission, which will, in effect, totally depress the bone marrow. The following day, the cells are collected from the storage facility at KCH and defrosted immediately prior to administration. They are then returned to the patient via their central line by a team of specialist nurses. The cells travel to the bone marrow and stimulate the production of new growth in the depressed marrow, which will be free of disease. Two to three weeks later the new blood cells are released into the blood stream.

During the following weeks patients become neutropenic and require reverse barrier nursing, antibiotic therapy and, most probably, both platelet and packed

cell support; they are closely monitored by their consultant and the other clinicians involved in their care - specific problems such as cardiac, pulmonary, renal or central nervous system complications, should they occur, are treated by the appropriate specialist. They are also reviewed by the palliative care consultant to ensure good symptom control - patients may typically experience nausea, lethargy, oral mucositis and alopecia - and by the dietician, who will try to ensure they retain weight and eat appropriately.

Once deemed fit for discharge and their blood counts have recovered to an acceptable level, patients will be seen regularly on an outpatient basis. These visits become less frequent as they regain normal bone marrow function and their sense of well-being returns.

With thanks to Linda Little, Haemato-Oncology Co-ordinator.

For further information, please contact Linda at the Clinic on 020 8247 3351.

Oncology Clinic GP Seminars

One further GP seminar is planned for this year at the Oncology Clinic:

- Prostate Cancer
Tuesday 14 November

Please contact Suzanne Smith on 020 8247 3405 to book your place.