Haematopoietc Stem Cell Transplant Programme

Royal Bristol Hospital for Children

The Anthony Oakhill HSCT Training Fellowship

The following objectives have been taken from the 6th Edition of the Joint Accreditation Committee of International Society of Cellular Therapy (ISCT) and European Society for Blood and Marrow Transplantation (EBMT) and the Foundation for the Accreditation of Cellular Therapies (FACT) Standards (JACIE/FACT).

They are inclusive of all aspects of haematopoietic stem cell transplantation (HSCT) and constitute what would be expected of a transplant physician seeking accreditation. In our instance, the trainee is expected to complete this training as it applies to the practice of both allogeneic and autologous HPCT in paediatric patients (< 18 years of age). I have retained the numeric nomenclature of the JACIE/FACT standards to allow assignment of the different objectives to the components of the training program.

OBJECTIVES

B3.3.3 Clinical Program Directors and attending physicians shall have received specific training and maintain competency in each of the following areas:

B3.3.3.1 Indications for HPC transplantation.

B3.3.3.2 Selection of suitable recipients and appropriate preparative regimens.

B3.3.3.3 Allogeneic and autologous donor selection, evaluation, and management.

B3.3.3.4 Donor and recipient informed consent.

B3.3.3.5 Administration of ABO incompatible cellular therapy products.

B3.3.3.6 Administration of preparative regimens.

B3.3.3.7 Administration of growth factors for HPC mobilization and for post-transplant hematopoietic cell reconstitution.

B3.3.3.8 HPC product infusion and patient management.

B3.3.3.9 Management of neutropenic fever.

B3.3.3.10 Diagnosis and management of infectious and non-infectious pulmonary complications of transplantation.

B3.3.3.11 Diagnosis and management of fungal disease.

B3.3.3.12 Diagnosis and management of veno-occlusive disease of the liver.

B3.3.3.13 Management of thrombocytopenia and bleeding.

B3.3.3.14 Management of hemorrhagic cystitis.

B3.3.3.15 Management of mucositis, nausea, and vomiting.

B3.3.3.16 Monitoring and management of pain.

B3.3.3.17 Diagnosis and management of HPC graft failure.

B3.3.3.18 Evaluation of post-transplant cellular therapy outcomes.

B3.3.3.19 Evaluation of late effects of allogeneic and autologous transplants, including cellular, pharmacologic, and radiation therapy.

B3.3.3.20 Documentation and reporting for patients on investigational protocols.

B3.3.3.21 Applicable regulations and reporting responsibilities for adverse events.

B3.3.3.22 Palliative and end of life care.

B3.3.4 Additional specific clinical training and competency required for physicians in Clinical Programs requesting accreditation for allogeneic HPC transplantation shall include:

B3.3.4.1 Identification, evaluation, and selection of HPC source, including use of donor registries.

B3.3.4.2 Donor eligibility determination.

B3.3.4.3 Methodology and implications of human leukocyte antigen (HLA) typing.

B3.3.4.4 Management of patients receiving ABO incompatible HPC products.

B3.3.4.4 Diagnosis and management of immunodeficiencies and opportunistic infections.

B3.3.4.6 Diagnosis and management of acute graft versus host disease.

B3.3.4.7 Diagnosis and management of chronic graft versus host disease.

B3.3.5 The attending physicians shall be knowledgeable in the following procedures:

B3.3.5.1 HPC processing.

B3.3.5.2 HPC cryopreservation.

B3.3.5.3 Bone marrow harvest procedures.

B3.3.5.4 Apheresis collection procedures.

B3.3.5.5 Extracorporeal photopheresis for GVHD.

B3.3.5.6 Washing and diluting of cellular therapy products.

B3.4 PHYSICIANS-IN-TRAINING

B3.4.1 Physicians-in-training shall be licensed to practice in the jurisdiction of the Clinical Program and shall be limited to a scope of practice within the parameters of their training and licensure and shall be appropriately supervised.

B3.4.2 Physicians-in-training shall receive specific training and develop competency in transplant-related skills, including but not limited to those listed in B3.3.3

PROFESSOR ANTHONY OAKHILL

Professor Anthony Oakhill, who died on October 9, 2006 aged 56, pioneered techniques of unrelated donor HSCT that have saved the lives of hundreds of children and adults who would otherwise have died of leukaemia and other diseases curable by HSCT. Appointed to the Bristol Children's Hospital as Consultant Haematologist in 1982, he put his department at the forefront of what were to become the two most important advances in the treatment of childhood leukaemia over the next two decades. One was the widening of the use of bone marrow transplantation to enable patients to receive marrow from donors who were not members of their own family by introducing novel techniques of T-cell depletion using Campath antibodies. The other was the refinement of techniques to detect the presence of residual leukaemia that can still be present in the patient after treatment, but cannot be detected by conventional methods of looking with a microscope at the blood and bone marrow, termed minimal residual disease (MRD). This fellowship programme commemorates his many contributions to the science of HSCT.

HSCT PROGRAMME

The Paediatric Haematology/Oncology programme in Bristol serves the South West region (approximately 5.5m people) with 130 new paediatric cancer patients diagnosed each year. There is an extensive shared care network, and all areas of the specialty are represented, including a developing teenage and young adult (TYA) service. The Paediatric HSCT programme in Bristol is one of the largest dedicated Paediatric HSCT programmes in the UK and serves the entire South West region, Cambridge and Norfolk and Northern Ireland. The programme performs approximately 35 allogeneic transplants and 5-10 autologous transplants (autologous transplantations are mainly performed by the oncology team).

There is an extensive shared care network with other tertiary oncology centers in the referral network, namely, Addenbrooke's Hospital in Cambridge, Oxford University Hospital, Noah's Ark Children Hospital in Cardiff, University Hospital of Southampton and the Royal Belfast Hospital for Sick Children. There are 4 consultants and 1 speciality doctor in the HSCT programme. Professor Colin Steward is the lead transplant physician for bone marrow failure syndromes, myelodysplastic and genetic metabolic disorders. Dr Adam Gassas is the lead physician for malignant transplantation and is a full JACIE/FACT International regulator and inspector for stem cell transplantation. Dr John Moppett is the UK lead for paediatric acute lymphoblastic leukemia trials and contributes equally to the haematology and HSCT services. Dr Michelle Cummins leads the department's haemoglobinopathy services and has extensive experience in HSCT and paediatric leukemias. The HSCT specialty doctor is Dr Ponni Sivaprakasam who completed her training in HSCT at the Hospital for Sick Children in Toronto, Canada and Manchester Children Hospital, UK. The department has a full-time HSCT intake coordinator who is responsible for pre-transplant work-up and other administrative communications between referring centres and the HSCT programme. There is also, a medical coordinator (usually a trainee registrar) who coordinates HSCT from a medical standpoint between centres and there is a full-time Clinical Nurse Specialist who liaises between referring centres, families, regulatory agencies, referring consultants and local HSCT consultants. Donor selection, HLA typing and stem cell processing are all supported by the NHSBT which is located a few miles away from the Hospital.

HSCT FELLOWSHIP PROGRAMME

The programme will run over a twelve month period and shall include;

- 4 months of in-patient clinical service on the HSCT unit (ward 34),
- 4 months on the HSCT outpatient day unit, clinics and HSCT coordination.
- 1 month of laboratory service (NHSBT, HLA lab, donor chimerism, Blood Bank, Morphology, Cytogenetics and Molecular lab [minimal residual disease detection].
- 0.5 month on the Infectious Diseases Immunocompromised Service
- 0.5 month on the Immunology Service.
- 2 months designated for focusing on research activity.

Early during their training, fellows will be assigned between 2 to 4 new patients undergoing HSCT to provide a "real time" opportunity to follow a patient through the entire journey. The patient will still be assigned a primary consultant but the fellow will be expected to be the frontline physician for shepherding the patient and family through the HSCT experience. There will be flexibility within the training programme to accommodate research activities depending on the clinical acuity for the in-patient and out-patients clinical time. For example, if a research project is allocated then data collection could occur during the in-patient or out-patient rotations and the final analysis and abstract/manuscript writing could occur in the 2 months that is allocated for research. The trainee is to pick a project near the start of the year (anticipate that this will generally be a retrospective review) with the expectation that the project will be ready or close to ready for presentation or submission by the end of the academic year.

The on-call requirement for the trainee is as directed by the Haematology/Oncology Division Education Programme Director. The on-call cover will be shared with the Haem/Onc Specialist Registrars with cross cover between 17:00 - 22:00. All on-call work after 22:00 is handed over to the hospital night team. **There is therefore NO overnight cover required with this post.**

The fellow is expected to participate in the administrative structure of the HSCT section (HSCT MDTs, HSCT Quality management meetings, patients' care rounds and weekly HSCT status meetings and selected other activities as they occur).

MENTORSHIP

At the beginning of the HSCT fellowship academic year, the fellow will be assigned a mentor (HSCT consultant physician) who will meet the fellow at the beginning of their fellowship and draw a 12 month plan to meet the objective of the fellowship. A quarterly 1 hour meeting will be routinely scheduled between the mentor and mentee to assess progress and set up the next objectives phase. Other ad-hoc meetings may be needed especially if there are issues relating to research or other educational needs. A final exit meeting will happen in the last month of the fellowship with feedback from the fellow as part of quality and improvement for the fellowship programme.

EDUCATION

The formal teaching programme includes one department academic meeting (includes M&M, journal club and audit) and a consultant-led teaching session twice per week (Monday @ 15:30 and Thursdays @ 09:00).This supplements the educational value of clinical meetings - weekly x-ray and HSCT planning meetings; twice monthly solid tumour board; twice monthly neuro-oncology tumour board meetings; monthly leukaemia and haematology MDT; monthly national HSCT MDT teleconference meeting; weekly hospital grand rounds. IT access on wards and in office area with internet, PubMed etc. There is a small departmental library and an excellent modern Trust Education Centre. Opportunities exist for participation in clinical research and there are weekly clinical trial review meetings, clinical research team or research governance meetings. There is also a small group teaching or 1:1 teaching with the attending HSCT physician covering various aspects of HSCT related topics.

EVALUATION

The HSCT fellow will be evaluated monthly using the forms currently being used to evaluate the in- and out-patient HSCT training for HSCT fellows. The evaluation will take into consideration feedback from as many members of the team as possible. Interim meetings with the mentor should occur every four months during the training period to allow for bidirectional feedback and to ensure that training objectives are fulfilled.

REFERENCE

FACT-JACIE International Standards for Hematopoietic Cellular Therapy
Product Collection, Processing, and Administration, Sixth Edition

Sixth Edition, March 2015