DukeMedicine

Division of Cellular Therapy

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DOCUMENT TITLE:

Infusion of Stem and Progenitor Cells for Allogeneic or Autologous Transplant

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ABMT-GEN-017
INFUSION OF STEM AND PROGENITOR CELLS FOR ALLOGENEIC OR AUTOLOGOUS TRANSPLANT

1 PURPOSE

1.1 To outline the procedure for the infusion of fresh or thawed transplant products (PBPCs, bone marrow, DLI, umbilical cord blood cells).

2 INTRODUCTION

2.1 On the day of transplant, peripheral blood stem/progenitor cells, umbilical cord blood, autologous or allogeneic bone marrow or donor lymphocytes (DLI) which have been cryopreserved and stored after collection **or** collected and infused as a fresh product (with or without manipulation) are prepared in the Stem Cell Laboratory for infusion. An infusion time will be coordinated in advance between the Stem Cell Laboratory and the appropriate nursing unit.

3 SCOPE AND RESPONSIBILITIES

3.1 The Laboratory Manager, BMT Medical Directors of the Adult (9200) and Adult BMT Clinic. Nurse Managers and attending physician on service are responsible for ensuring the requirements of this procedure are successfully met.

4 DEFINITIONS/ACRONYMS

4.1 PBPCs-peripheral blood stem/progenitor cells

4.2 DLI- donor lymphocytes

4.3 DMSO- Dimethyl sulfoxide

4.4 BMT-Bone Marrow Transplant

4.5 SCL-Stem Cell Laboratory

5 MATERIALS

5.1 Personal Protective Equipment

6 EQUIPMENT

6.1 NA

7 SAFETY

7.1 Pre-Treatment Procedure:

7.1.1 *Verify that Informed Consent has been obtained.

7.1.2 Discuss possible side effects and symptom management strategies with the patient.

7.1.3 Serum calcium level should be WNL or supplemented prior to infusion.

7.1.4 Potassium level should be > 3.2 prior to infusion.

8 PROCEDURE

8.1 Stem Cell Reinfusion Administration Adult

8.1.1 Pre-medicate as ordered with:

8.1.1.1 Hydrocortisone 50mg IV

8.1.1.2 Diphenhydramine 25mg IV (order may be written for PO in the ambulatory setting)

8.1.1.3 Acetaminophen 650mg PO

8.1.2 Stem cells will be delivered in a syringe or infusion bag. Always prime the tubing with NS. This is then directly attached to the patient's central line. Remove cap prior to attaching any line for infusion of stem cells.

8.1.2.1 If the stem cell product is prepared in a syringe, connect the syringe containing the product directly to port of the IV tubing that is closest to the patient (lowest port).

8.1.2.2 If the stem cell product is prepared in an infusion bag, prime a second line with NS and attach to the first IV line at the port closest to the patient (lowest port). Next, remove NS bag used to prime second line from the tubing, ensuring to maintain sterility and attach the tubing to the stem cell infusion bag.

8.1.2.3 For cord blood, an infusion set is provided for use at the patient's bedside. This set is compromised of the bag of cells to be infused which has been sterile docked to a bag of normal saline. The saline will be used to rinse the transplant bag and tubing after the cells are infused. If the patient is receiving more than one cord blood unit, the second unit should not be thawed until the first unit has been infused and the lab has confirmed with the clinical team that the patient is stable. There should be a minimum of 2 hours between the end of the infusion of the first unit and the start of the infusion of the second unit. No additional pre-medications will be needed unless time lapse is > 4 hours from the administration of the first doses of pre-medications.

8.1.2.4 Prior to the administration of a stem cell product, the RBC, DMSO and volume loads of the combined infusions must be considered and adjusted to provide safe products to the patient.

8.1.2.5 Do not use blood or filtered tubing.

8.1.3 2 RNs must verify the label on the stem cell product against patient's armband, patient's reinfusion worksheet, and patient's cryopreservation sheet.

8.1.4 Administer stem cells at the rate of patient tolerance, no less than 10ml/minute. If administered via an infusion bag, use gravity drip. If patient experience chills, bradycardia, hypertension (MAP > 100) or other symptoms, slow infusion and notify physician or physician designee.

8.1.5 Do not administer anything but normal saline through the stem cell infusion line. RN must have a dedicated medication line for pre-medications and/or supplements. *Physician order must be obtained to infuse stem cells via infusion pump or PICC line.

8.1.6 Provide patient with hard candy or popsicles to alleviate unusual taste during stem cell reinfusion.

8.1.7 Monitor & document vital signs q 15 minutes throughout infusion and 30 minutes post infusion.

8.1.8 After infusion is completed, dispose of all materials in Biohazard bin.

8.1.9 Instruct patient and caregiver that stem cell infusions sometimes results in the breakdown of red blood cells, causing hematuria.

8.1.10 Documentation:

8.1.10.1 Document patency of IV site/blood return from catheter, patient's tolerance of stem cell reinfusion, response to interventions to minimize side effects, and understanding of expected side effects and symptom management strategies. Document start and stop time of stem cell reinfusion. Fax all Allogeneic/UCB sheets to the Cryo Lab, with completed 24-hour data.

8.1.11 Reportable Conditions:

8.1.11.1 Chills

8.1.11.2 Bradycardia

8.1.11.3 Hypertension or hypotension (MAP < 60 mmHg)

8.1.11.4 Chest tightness

8.1.11.5 Respiratory distress

9 RELATED DOCUMENTS/FORMS

9.1 Form Infusion Form or NMDP form 680

9.2 Form Adverse Experience Form or NMDP form 760

10 REFERENCES

10.1 Buchsel, PC and PM Kapustay, Eds. Stem Cell Transplantation: A Clinical Textbook. Oncology Nursing Press, Pittsburgh PA. 2000.

11 REVISION HISTORY

Revision No.	Author	Description of Change(s)
06	J. Frith	8.1.2.3 Added if the patient is receiving more than one cord blood unit, the second unit should not be thawed until the first unit has been infused and the lab has confirmed with the clinical team that the patient is stable. 8.1.2.4 Added prior to the administration of a stem cell product, the RBC, DMSO and volume loads of the combined infusions must be considered and adjusted to provide safe products to the patient

Signature Manifest

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