

ISHAGE 2001 - TECHNICAL BREAKFAST 1&16
STORAGE and CRYOPRESERVATION of CELL PRODUCTS

THAWING in the LABORATORY

1.0 PRINCIPLE:

Bone Marrow and peripheral blood stem cells (PBSC) collected from allogeneic or autologous donors are infused as therapy for hematologic malignancies or as salvage from myeloablative chemo-radiotherapy. These cells may be cryopreserved and stored in a liquid nitrogen freezer until needed.

2.0 SPECIMEN:

- 2.1 Bone marrow cells - cryopreserved
- 2.2 Peripheral Blood Stem Cells (PBSC) – cryopreserved
- 2.3 Donor Leukocytes
- 2.4 Umbilical Cord Blood

3.0 SUPPLIES AND EQUIPMENT:

- 3.1 Plastic Ziplock Bags (Nalgene #372-953)
- 3.2 600 ml Transfer Pack with 8 couplers (Baxter #4R2027)
- 3.3 Plasmalyte A (Baxter #2B2543)
- 3.4 Heparin 1,000 units/ml (Upjohn #811317303)
- 3.5 Standard Blood Filter (Baxter #4C7772)
- 3.6 Sterile Water (Baxter #2B7117)
- 3.7 60 cc syringes
- 3.8 10 cc syringes
- 3.9 Micro Pin (Braun #MP-1000)
- 3.9 Sampling Site Coupler (Baxter #1C8333)

4.0 PROCEDURE:

- 4.1 Standard Method:
 - 4.1.17 Prearrange infusion time with the patient's nurse and physician.
 - 4.1.2 Fill the water bath with 3-6 liters of sterile water and heat to 37°C.
 - 4.1.3 Calculate the amount of Plasmalyte and Heparin to add to the transfer pack with 8 couplers.
 - 4.1.3.1 Determine total volume of Plasmalyte needed:
ml of Plasmalyte = # of bags x 12.5
 - 4.1.3.2 Determine amount of heparin needed:
units of heparin = (Cell volume + Plasmalyte) x 5ml of heparin = # units / 1,000 units per ml.
 - 4.1.17 Add the calculated volume of heparin and Plasmalyte to the transfer pack through a sampling site coupler.
 - 4.1.5 Label transfer pack with Progenitor Cell label containing recipient name, medical record number (MR#), unit number and all other appropriate information.
 - 4.1.17.1 NOTE: The expiration time is two hours from the thaw time.
 - 4.1.18 Add approximately 3 inches of liquid nitrogen to Dewar flask.
 - 4.1.7 Remove appropriate Cryocyte bags from the LN₂ freezer and place them in the Dewar flask after comparing name, MR# and unit # with the BMT authorization sheet (see attachment#1).
 - 4.1.19 Transport the cells to the location of the waterbath.
 - 4.1.9 Thaw bags one at a time and pool in transfer pack.

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- 4.1.17 Take a sample for cell count, viability, sterility check, CFU and flow cytometry.
- 4.1.11 Weigh the bag and record as volume (ml) on the label.
- 4.1.12 Perform cell count, viability and differential (see appropriate procedure).
- 4.1.17 Calculate the NC/kg and MNC/kg and record on the infusion sheet (see appropriate procedure).
- 4.1.18 Complete the infusion sheet (see attachment #2).
- 4.1.15 Record date time and technologist's initials in the accessioning log next to appropriate unit number.
- 4.1.16 Make a copy of the infusion sheet and file in patient folder.
- 4.1.17 Transport the cells and the infusion sheet to the proper nursing unit.

5.0 **PROCEDURE NOTES:** NA

6.0 **REFERENCES:**

- 6.1 Kotula P, Areman E, Hancock S and Sacher R. An Alternative to Bedside Thawing of Peripheral Blood Stem Cells. *Journal of Hematotherapy*. Volume 1, Number 3, June 1995:222.