OUTPATIENT AUTOLOGOUS PRE-TRANSPLANT CLASS

Please sign in on clipboard.
Please silence cell phones and turn off recording equipment.

Transition Nurses
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Arlene Zawatski, RN, BMTCN
Bone marrow and cancer cells are destroyed with high dose or “conditioning” chemotherapy.

Stem cell transplant occurs after completion of conditioning chemotherapy.

Cells begin to grow or “engraft” and create new bone marrow in approximately 10 – 12 days.
What is a Stem Cell?

You know when I was a little stem cell, I didn’t know what I wanted to be either.

But I’m so confused.

Stem Cell

- Proerythroblast
- Myeloblast
- Lymphoblast
- Monoblast
- Megakaryoblast

- Proerythroblast
- Myeloblast
- Lymphoblast
- Monoblast
- Megakaryoblast

- Basophil
- Eosinophil
- Neutrophil
- Lymphocyte
- Monocyte
- Megakaryocyte

- Enzymocytes
- Granulocytes
- Agranulocytes
- Platelets

Red Blood Cells
White Blood Cells
Platelets
AUTO TRANSPLANT TIMELINE
A hollow, plastic tube placed in the chest and tunneled under the skin
- Inserted before collection
- Removed before returning home

Used for:
- Collection and infusion of stem cells
- Chemotherapy
- Most blood samples
- IV fluids and IV medications
Growth factor injections (Neupogen/Zarxio/Mozobil) given once daily for 4-5 days

4th day: labs drawn to check stem cell count

5th day: collection begins
- in outpatient apheresis center
- can last up to 10 hours per day
- can range from 1-3 days
- Staff will notify you with instructions if more than 1 day of collection and additional growth factor injections are needed

Cells are processed, divided into bags, frozen & stored
Conditioning therapy (chemotherapy) is given over 1 to 6 days depending on treatment plan.

Scheduled nausea medications given
- Additional nausea medications available as needed

Ice chips with Melphalan chemotherapy
- Decreases severity of mouth sores
- Hold ice chips in mouth and allow to melt
- Use 5 minutes before start of infusion, during infusion, and for 15 minutes after the end of infusion
HOME CHEMOTHERAPY PRECAUTIONS

- Take precautions with all body fluids (vomit, urine, stool) until **48 hours after the end of chemotherapy**

- **For caregivers:**
  - Avoid contact with patient’s body fluids by wearing gloves when handling dirty linen or clothing
  - If linen or clothing becomes dirty, wash items separately once before washing with other laundry
  - Wash hands thoroughly with soap and water after providing any care

- **For patients:**
  - Make sure toilet seat is clean and dry and that you sit when urinating
  - Close toilet lid before flushing to avoid splashing: Flush Twice
  - Wash hands thoroughly with soap and water after using the bathroom
Stem Cell infusion on Day “0”
- Pre-medications given to prevent reactions
- May receive IV fluids before/after transplant
- Stem cells are infused at bedside by nurse
- Length of time depends on # of bags
- Nurses monitor for possible reactions (itching, hives, cough, vital sign changes, etc.)
- Report any new symptoms to nurse right away
Red blood cells, white blood cells, and platelet counts will drop after conditioning therapy, which is expected. These counts will rise as new blood cells start to grow from your stem cells following your transplant. This is called “engraftment”. Usually, the first cells to return are white blood cells, then red blood cells, and finally platelets. Neupogen is given daily starting on Day + 7 until Absolute Neutrophil Count (ANC) > 1500. As you wait for engraftment, you experience the side effects of conditioning therapy and can experience complications of transplantation.
COMMON SIDE EFFECTS OF CONDITIONING THERAPY

- Nausea and vomiting
- Diarrhea
- Decreased appetite
- Mouth sores (mucositis)
- Hair loss
- Pain
- Fatigue, changes in memory & concentration
- Decreased blood cell counts
- Infection
White Blood Cells (WBCs)
- Neutrophils are a type of WBC that can respond to infection
- Absolute Neutrophil Count (ANC) < 500 means you are neutropenic and at high risk for infection

Red Blood Cells (RBCs)
- Carry oxygen to the body
- Measured in the blood by Hemoglobin (Hgb)
- Hgb < 7.0 requires blood transfusion unless specified by BMT doctor

Platelets
- Help to prevent bleeding by helping the blood to clot
- Bleeding risk increases when platelet count is < 50
  - Please report any signs of bleeding
- Platelet count < 10 requires platelet transfusion
INFECTION

- Can occur anywhere in the body
- You will take medications to prevent infections:
  - Bacteria (Antibiotics)
  - Viruses (Antivirals)
  - Fungus (Antifungals)
- Check your temperature twice daily (AM & PM)
- Fever is **100.4** degrees F or higher
- Call BMT immediately!
  - You will be admitted to the hospital
  - Tests are done to rule out infection
Precautions begin with the start of chemotherapy

Patients must wear a yellow duck-billed mask when outside local lodging, even when taking a walk or coming to BMT clinic.

Once patients begin chemotherapy, they should avoid public places until engraftment (ex. Grocery store, movie theater, etc).

Everyone MUST wash their hands (patients, visitors, staff)

Absolutely NO sick visitors

Follow immunosuppressed diet guidelines

No fresh or dried flowers allowed

Remove gel, artificial nails, and all piercings except earrings

Wear glasses instead of contact lenses
CHG (Hibiclens) is a medication for your skin that helps prevent infection.

- CHG soap or wipes must be used daily.
- CHG soap is applied directly to skin and rinsed in the shower.
- CHG wipes can be used in place of showering and do not require rinsing.
- Do not use CHG on face - use liquid soap/body wash instead.
Rinse mouth with saline 4 times daily
  - Provided by BMT Treatment Center
  - Avoid mouth rinses that contain alcohol

Toothbrush should be changed 48 hours after chemotherapy completed and every 7 days while neutropenic
  - Provided by BMT Treatment Center

Keep toothbrush open to air to dry

No dental flossing, toothpicks or water picks until platelet count is greater than 50,000
Precautions begin with the start of chemotherapy
- Soft toothbrushes are to be used. Avoid dental flossing
- Avoid “blood thinners” (ex. Aspirin, Coumadin, Lovenox, Fragmin, Eliquis, etc.) as directed by BMT doctor
- Avoid forceful nose blowing
- Electric razors only
- Avoid trimming fingernails or toenails
- No vaginal tampons, rectal temps or suppositories
PAIN MANAGEMENT

- Pain is common during transplant.
  - Examples: mucositis, abdominal pain, body aches, bone pain, continued chronic pain
- It is OK to use pain medication to control your pain!
- You will not become addicted if using pain meds for pain management
- Dosing can be adjusted to reduce side effects while still controlling your pain.
- Our goal is to keep your pain at a comfortable level.
- We continuously ask about your pain to make sure we are meeting this goal.
  Please let us know your expectations.
DAILY VISITS AND ROUTINE

- Check into BMT Treatment Center every morning at designated time
  - Bring completed patient diary, all medication bottles, and medication list

- Labs drawn
  - Medications, IV fluids, and transfusions will be given.

- Doctor and Advanced Practice Provider (PA or ARNP) sees patient each day
  - Caregiver may leave after doctor rounds, but must return to review instructions before patient leaves for the day
# BMT-CI Outpatient Diary

### Note:
You do not have to wake up during the night to record your temperature, but should check it before going to sleep and when you wake up.

<table>
<thead>
<tr>
<th>Time</th>
<th>Food Intake</th>
<th>Fluid Intake</th>
<th>Urine (# of times)</th>
<th>Bowel Movement (# of times)</th>
<th>Temp. (location, rating 0-10)</th>
<th>Nausea (N) / Vomiting (V) (# of times)</th>
<th>Notes</th>
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<tbody>
<tr>
<td>12 AM</td>
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Completed by: [ ] Patient  [ ] Other  Relationship to patient if not patient: ____________

B = Boost  W = water
Hand gel is located next to the entry doors and MUST be used by everyone before entering.

Children under the age of 12 are not permitted on the inpatient units or in the outpatient treatment areas.

No more than 2 visitors allowed in room at any one time.

Anyone who has had a vaccination within the past 2 weeks should check with their doctor before visiting.

You may bring small crafts, cards, books, laptop computer, games, or any small form of entertainment.

Snacks and drinks are available and you may also bring your own, but nothing that needs to be refrigerated.
ONCE ENGRAFTMENT OCCURS

- Less frequent visits to BMT Treatment Center
- You will visit your primary BMT Doctor in their clinic
- You will still have to stay locally for approximately 30 days after date of transplant with caregiver
- Readmission to the hospital may be necessary during this time
- Central line will be removed before returning home
- Decision to return home is made by your primary BMT doctor
CAREGIVER ROLES & RESPONSIBILITIES:

Must be available 24 hours a day/7 days a week

- Monitor for symptoms
- Monitor temperature
- Manage medications
- Help prevent infections
- Do housekeeping and prepare meals
- Drive & accompany to appointments
- Be a supportive voice & emotional support
- Take care of yourself
If the caregiver has a fever, productive cough, runny nose, sore throat, nausea, vomiting, and/or diarrhea—please contact the back-up caregiver immediately and notify the BMT clinic, the patient may require additional testing.

If a caregiver is sick, he or she cannot continue to act as a caregiver until symptoms resolve or cleared by their doctor.
Emergency call 911

For questions or to report symptoms
Call BMT-CI Clinic at (813)745-7208
Ask for Triage
Available 24 Hours a day/7 days a week

At night, if you are unable to reach your clinical team by calling the above number,
Call Moffitt operator at (813)745-4673
Identify yourself as a BMT patient
Ask to speak to the Clinical Leader on 3 West

Don’t hesitate to call!!
LODGING

- Patients are required to stay within 30 minutes of Moffitt, further distances need to be approved by the BMT doctor.

- If needed, local lodging is available nearby.

- BMT social workers assist with these arrangements.
MEDICATIONS

- Use current medication list/prescription bottles
- Bring medication list and all medications to your appointments
- If medications are changed, obtain a new medication list prior to leaving for the day
- Get permission to take medications not on list
Avoid crowds and handshaking

All patients are required to wear ‘duck-bill’ masks until told otherwise. Masks are needed when coming to appointments and in public places.

Do not allow sick visitors or those exposed to contagious diseases to visit. Notify your doctor if you have been around anyone with flu-like symptoms.

Follow the food safety tips provided by the dietician.
The best way to prevent infection is hand washing!!

When in doubt, wash your hands!!

- Before, during, and after preparing food
- Before eating food
- Before or after treating a cut or wound
- After using the toilet
- After blowing your nose, coughing, or sneezing
- After touching or feeding an animal
- After handling pet food or pet treats
- After touching garbage
☐ Wet your hands with clean, running water (warm or cold), and apply soap.

☐ Lather your hands by rubbing them together with the soap. Be sure to lather the back of your hands, between your fingers, and under your nails.

☐ Scrub your hands for at least 20 seconds. Need a timer? Sing “Happy Birthday” twice from beginning to end.

☐ Rinse your hands well under clean, running water.

☐ Dry your hands using paper towels.
Use an alcohol-based hand sanitizer that contains at least 60% alcohol

- Apply the product to the palm of one hand
- Rub your hands together
- Rub over all surfaces of your hands and fingers until your hands are dry
- Do not rinse
- Do not use hand sanitizer if hands are visibly dirty, greasy, or after using the restroom. Use soap and water instead.
FAQs

- Patient should avoid being in the room while it is being cleaned
- Minimize exposure to dust & fumes from cleaning products
- Dust with a damp cloth
- Clean eating area and bathroom daily
- Vacuum and mop floors weekly
- Change sheets/pillow cases weekly
Patients should **AVOID:**

- Contact with human or animal feces (no cleaning litter boxes, fish tanks, bird droppings, or changing baby’s diapers)
- Contact with animals like birds, reptiles, or rodents
- Zoos, petting zoos, farms, and barns
- Contact with soil, lawn waste, grass, compost, and gardening
- Outdoor activities such as: golfing, hunting, horseback riding, or fishing
- Swimming (no lakes, oceans, pools, or hot tubs)

Refer to page 49 in the Transplant Guide
Patients should **AVOID:**

- No construction sites (home renovations, etc.)
- No carpentry or woodworking
- No second-hand smoke (cigarettes, fireplaces, BBQ grills, etc.)
- No handling of chemicals (pesticides, fertilizers, pool chemicals, etc.)
- No illicit drugs or herbals (no marijuana, herbal supplements, vitamins, etc.) unless approved by the doctor
Patients should **USE CAUTION:**

- **With Pets:**
  - Patients should not clean up after pets
  - Avoid exposure to the face
  - Pets should not sleep in the patient’s bed
  - Wash hands after feeding pets, handling pet treats, and/or petting
  - For any pet related injury (scratch/bites), wash area with soap & water, and notify medical team
Patients NEED PERMISSION from their DOCTOR:

- To resume driving
- To do housekeeping
- To take over-the-counter medication
- To drink alcohol
- To go back to work or school
- To stop wearing the mask
- To travel

Refer to page 49 in the Transplant Guide
PATIENT EXPECTATIONS:

- Check temperature twice daily (AM & PM)
- Wear SPF 30 or greater sunscreen every day
- Report skin changes or rashes to the transplant nurse or doctor
- Shower and change clothing daily
- Protect the central line while showering
- Change the towel and wash cloth daily
- Continue good oral hygiene
Patients should wear closed toed shoes and avoid slippery foot coverings

Patients should use recommended assistive devices (cane, walker, etc.)

Provide help and assistance to patient as needed
CALL BMT-CI CLINIC FOR:

- Fever of **100.4** or higher
- Cold symptoms: such as sore throat, runny nose, cough
- Wheezing or cough with bloody, yellow, or green mucous
- Fainting, becoming lightheaded, or dizziness upon standing
- Any fall with or without visible injury
- New or worsening diarrhea
- Bright red, dark, red, or black stools
- New or worsening blood in the urine

BMT-CI Clinic (813)745-7208
Shortness of breath when moving or when lying flat
Unstoppable nosebleeds
New or frequent nausea or vomiting
Bright red, dark red, or black vomit
Swelling, tenderness, or redness of an arm or leg
New or worsening pain, including headaches
Anything that causes you concern- Please call!
SUMMARY:

- As a caregiver, you play a vital role in your loved one’s care and recovery
- Education is one part of your preparation as caregiver
- BMT Team is available 24 hours for you!!
QUESTIONS?????