NURSING CHALLENGES CARING FOR BMT PATIENTS WITH GVHD

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Making Cancer History®
NURSING (AND MEDICAL) CARE OF BMT PATIENTS IS COMPLICATED!
TRENDS IN BMT

- **Survival is improving** and patients are experiencing better quality of life (QOL) during treatment, early recovery and long term.
  - Expanding pool of stem cell sources
  - More effective, less toxic regimens
  - New supportive care drugs
  - Maintenance therapy
  - Specialized medical and nursing care

- Disease recurrence, **Graft-versus-host Disease (GVHD)**, organ failure and secondary cancer common causes of late death

Majhail & Rizzo, 2013; Wingard et al., 2011 (CIBMTR)
GVHD requires additional set of skills and knowledge: expected and less common side effects, assessment skills, standard and novel treatments, and acute/ICU care.

Effects of acute (late acute or overlapping syndrome) and chronic GVHD:

- require symptom recognition/knowledge of treatment modalities
- management and care of physical & psychosocial elements
- require consistent coordination of care for possible prolonged period of time

Advocating for patient may include preparing for end of life IF refractory to treatment.
Nursing care of patients with Skin GVHD

Degree of skin alteration will dictate nursing measures to provide:

- hygiene
- treatment, topical and systemic
- infection prevention
- relief of discomfort
- functional ability (ADL)
- body image alterations

- Chronic GVHD Prevention/Early detection: patient education essential.
  - Avoiding sun, use sun protection
  - Skin assessment – regular self and medical exam
  - Recognize risk for skin/oral cancer.
<table>
<thead>
<tr>
<th>Skin Alteration</th>
<th>Topical steroid</th>
<th>Systemic steroids</th>
<th>Cleansing</th>
<th>Dressing</th>
<th>Infection</th>
<th>Moisturize</th>
<th>Pain/discomfort</th>
<th>Functional status/body image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rash – acute or chronic*</td>
<td>Yes**</td>
<td>Body surface***</td>
<td>Mild soap – Dove (x contact dermitis), cetaphil, CeraVe soap</td>
<td>None</td>
<td>Culture suspicious lesions</td>
<td>Yes (esp. after topical steroids Use unscented hypoallergenic cream/ointment, Aquaphor, CeraVe, Eucerin, Cetaphil, avoid lotions</td>
<td>Pruritis- Sarna, Sarna sensitive (hydrocortisone/ pramoxine), antihistamine, H2 blocker. Pain – mild/moderate</td>
<td>Limited ambulation 2nd to pain, edema</td>
</tr>
<tr>
<td>Exfoliative/ Desquamation</td>
<td>+</td>
<td>+ (depending on body surface)</td>
<td>Same</td>
<td>None – consider cotton glove/sock after moisturizer applied at night</td>
<td>Culture – antibiotic ointment on open lesion</td>
<td>++</td>
<td>Same</td>
<td>Same</td>
</tr>
<tr>
<td>Epidermal denudation/ Moist desquamation/ Ulceration</td>
<td>Avoid open areas</td>
<td>+</td>
<td>Normal saline or sterile water (if using dressing with Ag)</td>
<td>Non-adherent with antibiotic ointment / Silver foam (mepilex) /CoolMagic (hydrogel) No adhesive tape/secure w surgiflex/wrap</td>
<td>Culture, if vesicular viral culture to r/o herpes simplex or varicella-zoster</td>
<td>++ (under dressing if non-adherent drsg and intact skin)</td>
<td>Pain – severe, narcotic esp. before dressing change. May need additional med/sedation for more severe pain w drsg changes.</td>
<td>Dependent on location impend ambulation/movement; promote range of motion and/or isometric exercise. Provide emotional support for (temporary) changes</td>
</tr>
<tr>
<td>Ulceration area (sclerotic skin)</td>
<td>+</td>
<td></td>
<td>Mild soap unless broken, then as above</td>
<td>Protective</td>
<td>Same</td>
<td>++ Surrounding intact skin</td>
<td>Above, decompress with sterile needle, if painful.</td>
<td>Above</td>
</tr>
<tr>
<td>Bullae</td>
<td>+ Area around if needed</td>
<td>+</td>
<td>Mild soap (Dove, cetaphil)</td>
<td>No unless with ulceration</td>
<td>Same</td>
<td>+ mild to moderate, neuropathy</td>
<td>Prevent contracture- PT, OT, stretching, massage, heat/whirl-pool/support</td>
<td></td>
</tr>
<tr>
<td>Sclerotic, hidebound</td>
<td>No</td>
<td>+ Second line tx</td>
<td>Mild soap</td>
<td>No unless with ulceration</td>
<td>Same</td>
<td>+</td>
<td>None/may be temporary or permanent provide emotional support</td>
<td></td>
</tr>
<tr>
<td>Dyspigmentation</td>
<td>No</td>
<td>No</td>
<td>Mild soap (Dove, cetaphil)</td>
<td>None</td>
<td>Same</td>
<td>Yes</td>
<td>Referral, cosmetic consideration</td>
<td></td>
</tr>
</tbody>
</table>

Nursing Care Considerations of Skin GVHD (Neumann, Hymes, Alousi)
ERYTHEMATOUS MACULOPAPULAR RASH (MORBILLIFORM ERUPTION)

- Nikolsky sign
Esophagus: strictures

Oral cavity: dryness, ulcers, sclerosis

Liver: Cholestasis

G.I. System: Failure-to-Thrive, Malabsorption

Lungs: Bronchiolitis obliterans

Eyes: dryness, sicca syndrome

Skin: Sclerosis, Morphea

Vaginal Canal: Strictures

Fascia: Fascitis, Scleroderma
<table>
<thead>
<tr>
<th>PERFORMANCE</th>
<th>SCORE 0</th>
<th>SCORE 1</th>
<th>SCORE 2</th>
<th>SCORE 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCORE:</td>
<td>□ Asymptomatic and fully active (ECOG 0; KPS or LPS 100%)</td>
<td>□ Symptomatic, fully ambulatory, restricted only in physically strenuous activity (ECOG 1, KPS or LPS 80-90%)</td>
<td>□ Symptomatic, ambulatory, capable of self-care, &gt;50% of waking hours out of bed (ECOG 2, KPS or LPS 60-70%)</td>
<td>□ Symptomatic, limited self-care, &gt;50% of waking hours in bed (ECOG 3-4, KPS or LPS &lt;60%)</td>
</tr>
</tbody>
</table>

| SKIN | Clinical features: | □ No Symptoms | □ <18% BSA with disease signs but NO sclerotic features | □ 19-50% BSA OR involvement with superficial sclerotic features “not hidebound” (able to pinch) OR deep sclerotic features “hidebound” (unable to pinch) OR impaired mobility, ulceration or severe pruritus |
|      | □ Maculopapular rash | □ Lichen planus-like features | □ Papulosquamous lesions or ichthyosis | □ Hyperpigmentation | □ Hypopigmentation |
|      | □ Keratosis pilaris | □ Erythema | □ Erythoderma | □ Poikiloderma | □ Sclerotic features |
|      | □ Pruritus | □ Hair involvement | □ Nail involvement | □ % BSA involved |

NIH consensus scoring

| MOUTH | □ No symptoms | □ Mild symptoms with disease signs but not limiting oral intake significantly | □ Moderate symptoms with disease signs with partial limitation of oral intake | □ Severe symptoms with disease signs on examination with major limitation of oral intake |

| EYES | □ No symptoms | □ Mild dry eye symptoms not limiting vision | □ Moderate dry eye symptoms limiting vision significantly | □ Severe dry eye symptoms |

□ % BSA involved
SUBCUTANEOUS SCLEROSIS-CELLULITE-LIKE RIPPLING
<table>
<thead>
<tr>
<th>Mucosal change</th>
<th>No evidence of cGVHD</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erythema</td>
<td>None</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Lichenoid</td>
<td>None</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Ulcers</td>
<td>None</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Mucoceles*</td>
<td>None</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

*Mucoceles scored for lower labial and soft palate only

A: Erythema  
B: Lichenoid  
C: Ulceration  
D: Mucoceles
FIGURE 3. Boston Foundation for Sight PROSE (Prosthetic Replacement of the Ocular Surface Ecosystem) Scleral Lenses
DRESSING

Mepilex Ag Foam Dressing w/silver, 4" X 4"

Mepilex border adhesive foam

PolyMem Foam Dressing 3" x 3" Non-Adhesive Pink Pads
hydrophilic polyurethane membrane matrix with a semi-permeable polyurethane continuous thin film backing
NURSING CONSIDERATION OF GI – GVHD

• Accurate **Intake and output** – measuring stool volume is **essential**, cramping, nocturnal defecation, incontinence.

• **Culture stool** for c. diff, virus (rotavirus, norovirus, adenovirus), parasitic infections.

• Correct **fluid and electrolyte imbalance, nutrition consult**

• Administer **treatment**: steroid, antidiarrheal (ATC), antispasmodic, pain medication as needed

• **Skin care** – peri-anal barrier, consider bowel management system (Zassi) if needed for incontinence, bedridden.
COMPLICATIONS OF GVHD TREATMENT

Monitor for treatment adverse effects
- Infectious complications
- Microvascular damage
- Renal
  - Steroid myopathy
Physical therapy/occupational consult
Endocrine consult – diabetic nursing educator
  - Topical management
Psychosocial – body image
PSYCHOSOCIAL & SEXUAL FUNCTION

- Fatigue/mobility issues/cognitive alteration
- Sleep disorders
- Body image disturbance
- Anxiety disorders, depression
- Post traumatic stress disorder
- Post traumatic growth- new appreciation for life
- Sexual function- assess (dryness, narrowing), vaginal moisturizer & dilator, referral

Bishop & Wingard, 2004; Lee et al., 2003; Kydd & Rowett, 2006
Mitchell, Leidy, Mooney, Dudley et al. (2010) BMT. 100 pts., mean 42 m. post SCT, 40% denovo, 46% multiple sites, 50% severe, 45% moderate, 5% mild
ETHICAL ISSUES RELATED CARING FOR PATIENTS W GVHD

- Outcome for patient is related to response to treatment for GVHD

- Steroid refractory (progression after $\geq 3$ days of (max dose) steroids or no response after 7-14 days) aGVHD increase TRM (70%)

- Breaking bad news – start early (cultural differences); living will, medical power of attorney. “Advance care planning prior to your Stem Cell Transplantation” patient education document – GVHD discussed.
ISSUES RELATED CARING FOR BMT PATIENTS W GVHD

• Multi-disciplinary team may experience burnout, compassion fatigue, and/or moral distress*, low career satisfaction, work-life imbalance

• Importance of support for patients/family, caregivers, and professional care providers (each other)

GVHD is a major component in any allogeneic BMT Survivorship Program - cover the continuum of treatment, recovery and beyond.

Nurses (and primary care providers) in community settings are presented with unique challenges as more BMT survivors transition from the BMT centers to the community.
BMT SURVIVORSHIP ALGORITHM

Survivorship – Stem Cell Transplantation and Cellular Therapy (SCTCT): Allogeneic Stem Cell Transplant

This practice algorithm has been specifically developed for M.D. Anderson using a multidisciplinary approach and taking into consideration circumstances particular to M.D. Anderson, including the following: M.D. Anderson’s specific patient population; M.D. Anderson’s services and structure; and M.D. Anderson’s clinical information. Moreover, this algorithm is not intended to replace the independent medical or professional judgment of physician or other healthcare providers. This algorithm should not be used to treat pregnant women.

DISEASE

CONCURRENTLY

1. Patient presents 80 -100 days post Allogeneic Hematopoietic Stem Cell Transplant

2. SURVEILLANCE

3. Quantitative Immunoglobulins
   - Immunodeficiency Profile
   - Bone marrow biopsy/aspiration as indicated
   - Laboratory studies as indicated
   - Disease specific work up for relapse or progression

4. New primary or recurrent disease?

5. Return to prior treating phy

6. No

7. MONITORING FOR LATE EFFECTS

8. Assess for iron overload: Ferritin, iron, TIBC (See Iron Overload algorithm – Page 7)

9. Risk Reduction/Early Detection

10. Consider:
   - Oral Screening
   - Breast screening (See Breast Screening Algorithm)
   - Colorectal screening (See colorectal screening Algorithm)
   - Prostate Screening
   - Skin Screening

11. PSYCHOSOCIAL FUNCTIONING

12. Assess for:
   - Social integration
   - Depression/Axiety
   - Sexuality concerns

13. Refer or consult as indicated

1. Qualitative Immunoglobulins include: IgG, IgA, IgM

2. Immunodeficiency Profile: CD3, CD4, CD8, CD19, C16

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RESOURCES FOR NURSES & PATIENTS

• National Marrow Donor Program / Be The Match
  • bethematchclinical.org
  • Post Transplant Care Guidelines
  • 6, 12, and 24 month post-BMT follow up guidelines in print & electronic format
  • Advances e-newsletter
  • Stay up to date on current research
RESOURCES FOR NURSES & PATIENTS

- www.bmtinfonet.org
- BeTheMatch.org
- www.cancer.org
- www.cancer.gov
- CIBMTR.org
- www.cancercare.org
- www.fertilehope.org
- www.lls.org
- www.nbmtlink.org

- www.oncofertility.northwestern.edu/
- www.resolve.org
- www.resolve.org
- www.supersibs.org
- www.stupidcancer.com
- www.planetcancer.org
- www.vitaloptions.org
- www.youngsurvival.org
EDUCATION/CERTIFICATION FOR BMT NURSING PRACTICE

- Manual for BMT nursing practice, Oncology Nursing Society
- ONS web-based BMT course
- ASBMT – Nursing Special Interest Group
- Oncology Nursing Certification Corporation (ONCC) – Blood and Marrow Transplantation Certified Nurse (BMTCN)
Nursing care of BMT patients with GVHD require unique knowledge and skills that go beyond basic nursing care:

- **Administer medication** (IV/oral) including novel targeted therapies
- **Perform procedure** commensurate with training: ECP-extracorporeal photopheresis, skin biopsy (APRN)
- **Skin/dressing care** - specialized
- **TEACH** patient and family on expected care requirements and about their “new normal”
- **Coordinate care** and resource (SW, PT, OT, wound care)
- **Evaluate** effectiveness of treatment: report and document

Assist patient and caregiver to cope with complications and care requirements

Seek opportunities to stay current on new therapies in the ever changing specialty. Seek and apply for special training/certification

Support colleagues and seek assistance when needed to the mitigate “cost of caring” (compassion fatigue, moral distress, burnout)