A Caregiver’s Guide to Helping Myeloma Patients

Webinar 2, March 16, 2017
Managing the Ups and Downs of Caring for Multiple Myeloma Patients: Including Stem Cell Transplantation and Other Facets of the Treatment Journey

Speakers

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  Norwalk, Connecticut

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  Hackensack University Medical Center
  Hackensack, New Jersey
What is multiple myeloma?

- Multiple myeloma is a hematological (blood) cancer that develops in the plasma cells found in the soft, spongy tissue at the center of your bones (called bone marrow).
- Plasma cells make antibodies (immunoglobulins) to fight bacteria and viruses to stop infection.
- Multiple myeloma is characterized by the accumulation of malignant plasma cells within the bone marrow.
- Malignant plasma cells produce and secrete monoclonal antibodies.
- The excess monoclonal antibody, or M protein, negatively affects organs such as the kidneys, and the proliferative myeloma cells damage and disrupt normal bone and bone marrow function.

https://www.themmrf.org/multiple-myeloma/what-is-multiple-myeloma/

Goals of Therapy

- Achieving good response (≥VGPR)
- High response rate; rapid response
- Improve performance status
- Minimal side effects
- Prolong overall survival and preserve function and quality of life
Current Treatment Approaches: Active Myeloma

Is the patient a candidate for an autologous stem cell transplant?

**YES**
- 3–4 cycles of therapy (induction)
  - 3-drug regimens (generally preferred): VRD, VTD, VCD, IRD, KRD
  - 2-drug regimens: Vel/dex, Rev/dex
  - Clinical trial
- High-dose chemotherapy (melphalan) and autologous transplant
- Consolidation/maintenance?
- Supportive care

**NO**
- Any of the regimens listed for transplant candidates
- 2-drug regimen, particularly for patients with health/side effect concerns
- Clinical trial

For t(4;14): combination including a proteasome inhibitor such as Velcade (V) or Kyprolis is critical.

Treatment Approach for Relapsed Myeloma

NCCN Category 1* Recommendations

**Frontline treatment**
- **Induction**
  - Velcade
  - Vel/Doxil
  - Kyprolis/Rev/Dex
  - Empliciti/Rev/Dex
  - Ninlaro/Rev/Dex
  - Rev/Dex
  - Farydak/Vel/Dex
  - Pom/Dex
  - Darzalex/Vel/dex
  - Darzalex/Rev/Dex
  - Clinical trial
- **Consolidation**

**Maintenance**
- **Rescue**

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Managing the Ups and Downs of Caring for Multiple Myeloma Patients: Including Stem Cell Transplantation and Other Facets of the Treatment Journey

Preparation for Myeloma Therapy

1. What are the treatment choices? What are the risks and benefits of each?
2. What can I do to prepare for treatment?
3. How will treatment affect my normal routine?
4. What are the side effects and how can I minimize the risk of side effects?
5. What resources are available for me and my family?
6. What is the best way to get in touch with you for questions or emergencies?

Available Anti-Myeloma Agents: So Many Choices!

<table>
<thead>
<tr>
<th>Steroids</th>
<th>Conventional Chemo</th>
<th>IMiDs</th>
<th>Proteasome Inhibitors</th>
<th>HDAC Inhibitors</th>
<th>Monoclonal Antibodies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prednisone</td>
<td>Melphalan</td>
<td>Thalidomide (thalidomide)</td>
<td>Velcade (bortezomib)</td>
<td>Farydak (panobinostat)</td>
<td>Darzalex (daratumumab: anti-CD38)</td>
</tr>
<tr>
<td>Dexamethasone</td>
<td>Cyclophosphamide</td>
<td>Revlimid (lenalidomide)</td>
<td>Kyprolis (carfilzomib, [low/high dose])</td>
<td>Empliciti (elotuzumab: anti-CS1/SLAMF7)</td>
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<tr>
<td>Dexamethasone</td>
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<tr>
<td>Dexamethasone</td>
<td>Doxil</td>
<td>Pomalyst (pomalidomide)</td>
<td>Ninlaro (ixazomib)</td>
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<tr>
<td>Dexamethasone</td>
<td>DCEP/D-PACE</td>
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<tr>
<td>Dexamethasone</td>
<td>BCNU</td>
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<tr>
<td>Dexamethasone</td>
<td>Bendamustine</td>
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### Immunomodulatory Drugs (IMiDs)

<table>
<thead>
<tr>
<th>Drug</th>
<th>Description</th>
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</thead>
</table>
| Thalomid (thalidomide) | • Once-a-day pill  
• In combination with dexamethasone for newly diagnosed MM (2006) |
| Revlimid (lenalidomide) | • Once-a-day pill in combination with dexamethasone for patients who had received one previous therapy (2006) and for newly diagnosed MM (2015) |
| Pomalyst (pomalidomide) | • Once-a-day pill for MM patients who have received at least two prior therapies including Revlimid and a proteasome inhibitor and have demonstrated disease progression on or within 60 days of completion of the last therapy (2013) |

### Common Side Effects

<table>
<thead>
<tr>
<th>Drug</th>
<th>Side Effects</th>
</tr>
</thead>
</table>
| **Revlimid** | • Potential for blood clots  
• Reduced blood counts  
• Rash  
• Fatigue  
• Muscle pain (myalgia) or muscle cramping  
• Diarrhea  
• Small chance of second new cancers when given with melphalan |
| **Pomalyst** | • Fatigue and weakness  
• Low white blood cell counts  
• Anemia  
• Gastrointestinal effects  
• Shortness of breath  
• Upper respiratory infection  
• Back pain  
• Fever  
• Blood clots |

### Management

- Blood thinners (for example, aspirin or low-molecular-weight heparin [LMWH]) are given along with Revlimid or Pomalyst to reduce the risk of blood clots
- L-glutamine for cramps
- GI toxicity: avoid dairy; fibers (Metamucil); Imodium; colestipol; cholestyramine; dose reduction
- Sleep hygiene, regular exercise, dose reduction for fatigue

*Black Box Warning.*
Proteasome Inhibitors

<table>
<thead>
<tr>
<th>Drug</th>
<th>Description</th>
</tr>
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</table>
| **Velcade®** (bortezomib) | • IV infusion approved for refractory (2003), relapsed (2005), and newly diagnosed MM (2008)  
• SQ injection approved in 2012 |
| **Kyprolis®** (carfilzomib) | • IV infusion  
• Approved as a single agent (2012), as DOUBLET with dexamethasone (2016), and TRIPLET with Revlimid plus dexamethasone (2016) |
| **Ninlaro®** (ixazomib) | • Once-weekly pill  
• Approved TRIPLET with Revlimid and dexamethasone (2015) |

**Proteasome Inhibitors**

**Common Side Effects**

- Velcade:  
  - Peripheral neuropathy (numbness, tingling, burning sensations and/or pain due to nerve damage)  
  - Low platelets (thrombocytopenia)  
  - Gastrointestinal problems: nausea, diarrhea, vomiting, loss of appetite  
  - Fatigue  
  - Rash  

- Kyprolis:  
  - Fatigue  
  - Anemia  
  - Nausea  

- Ninlaro:  
  - Diarrhea  
  - Constipation  
  - Low platelets  
  - Peripheral neuropathy

**Management**

- Peripheral neuropathy occurs less often when subcutaneous or once weekly dosing is used for Velcade  
- Other peripheral neuropathy prevention:  
  - Vitamins and other supplements*  
  - Certain medications such as gabapentin, pregabalin, duloxetine, opioids (methadone)  
  - Acupuncture  
  - Physical therapy  
  - Shingles prevention pills  
  - Blood thinners

*Do not take any supplements without consulting with your doctor.
### Monoclonal Antibodies

<table>
<thead>
<tr>
<th>Drug</th>
<th>Description</th>
</tr>
</thead>
</table>
| Empliciti (elotuzumab) | • IV once a week for first 8 weeks; then every 2 weeks  
• In combination with lenalidomide and dexamethasone for MM patients who have received one to three prior therapies (2015)                                                                                                                                                                  |
| Darzalex (daratumumab) | • IV once a week for first 8 weeks; then every 2 weeks for 4 months, then monthly  
• As a single agent for patients who had received at least three prior lines of therapy including a proteasome inhibitor (PI) and an immunomodulatory agent or who are double-refractory to a PI and an immunomodulatory agent (2015) and in combination with lenalidomide or bortezomib and dexamethasone for MM patients who have received at least one prior therapy (2016) |

### Monoclonal Antibodies

#### Common Side Effects

| Empliciti | • Fatigue  
• Diarrhea  
• Fever  
• Constipation  
• Cough  
• Peripheral neuropathy |
|-----------|-----------------|
| Darzalex | • Infusion reactions  
• Nasopharyngitis  
• Upper respiratory tract infection  
• Decreased appetite  
• Pneumonia  
• Second new cancer* |

#### Management

| • Premedication in anticipation of infusion reactions  
• Post-infusion medications (Darzalex) |

*Small chance.*
Histone Deacetylase Inhibitors

<table>
<thead>
<tr>
<th>Drug</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farydak</td>
<td>• Every-other-day pill&lt;br&gt;• In combination with bortezomib and dexamethasone for MM patients who have received at least two prior regimens, including bortezomib and an immunomodulatory agent (2015)</td>
</tr>
</tbody>
</table>

Histone Deacetylase Inhibitors

<table>
<thead>
<tr>
<th>Common Side Effects</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farydak*</td>
<td>• Anti-diarrheal medication&lt;br&gt;• Baseline EKG prior to starting medication</td>
</tr>
</tbody>
</table>

*Black Box Warning.
Effects of Myeloma

Low blood counts

Decreased kidney function

Bone damage

Effects of Myeloma: Bone Disease

- Occurs in 85% of patients
- Weakened bone due to lesions or "holes"
- Increased levels of calcium in the blood (hypercalcemia)
- Leads to
  - Fractures
  - Spinal cord compression/collapse
Bisphosphonates for Myeloma Bone Disease

**How they work**
- Prevent bone disease from getting worse
- Slows bone destruction
- Does not build bone

**Benefits**
- Decreases pain and reduces fractures
- Anti-myeloma effect (Zometa): increases in survival time in one major study

**Dosing**
- IV infusion in doctor’s office every 3–4 weeks
- Zometa (zoledronic acid): 15-minute infusion
- Aredia (pamidronate): 2-hour infusion

**Side effects**
- Reduced kidney function
- Fracture of the femur
- Osteonecrosis of the jaw (ONJ): Painful exposed bone in the jaw

**Medication types**
- OC, osteoclast (inhibited, halting bone break-down)
- BP, bisphosphonate

**Additional Bone Disease Considerations**
- **ONJ**
  - Let your dentist know that you are receiving bisphosphonates
  - Keep your doctor informed of dental issues/need for dental work
- **Orthopedic procedures to stabilize the spine**
  - Vertebroplasty
  - Kyphoplasty
- **Radiation therapy for pain management**
**Effects of Myeloma: Low Blood Counts**

<table>
<thead>
<tr>
<th>Condition</th>
<th>What is it?</th>
<th>Symptoms</th>
<th>Other Causes</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anemia</td>
<td>Low RBC count</td>
<td>• Fatigue&lt;br&gt;• Depression/mood changes&lt;br&gt;• Difficulty breathing&lt;br&gt;• Weight loss&lt;br&gt;• Rapid heartbeat&lt;br&gt;• Nausea&lt;br&gt;• Diarrhea&lt;br&gt;• Difficulty sleeping</td>
<td>• Low levels of iron, folate, and vitamin B12</td>
<td>• Identify and treat causes other than myeloma&lt;br&gt;• Supplements&lt;br&gt;• Medications to increase number of red blood cells&lt;br&gt;• Blood transfusions</td>
</tr>
<tr>
<td>Neutropenia</td>
<td>Low WBC count</td>
<td>• Radiotherapy&lt;br&gt;• Infection</td>
<td>Infection Prevention&lt;br&gt;• Vaccination (pneumonia, flu)&lt;br&gt;• Treatment with intravenous IgG&lt;br&gt;• Antifungal medications&lt;br&gt;• Antiviral prophylaxis, in some cases (herpes zoster)&lt;br&gt;• Preventive antibiotics (controversial)</td>
<td>Treatment&lt;br&gt;• Medications to stimulate production of white blood cells&lt;br&gt;• Antibiotics&lt;br&gt;• Antifungal medications</td>
</tr>
<tr>
<td>Thrombocytopenia</td>
<td>Low platelet count</td>
<td>• Easy or excessive bruising&lt;br&gt;• Superficial bleeding into the skin (petechiae)&lt;br&gt;• Prolonged bleeding from cuts&lt;br&gt;• Bleeding from the gums or nose&lt;br&gt;• Blood in urine or stool</td>
<td>• Viral infection (hep B or C)&lt;br&gt;• Immune thrombocytopenia&lt;br&gt;• Medications (heparin, sulfa)</td>
<td>• Identify and treat causes other than myeloma&lt;br&gt;• Platelet transfusion&lt;br&gt;• Hold anticoagulation</td>
</tr>
</tbody>
</table>

**Effects of Myeloma: Decreased Kidney Function**

- Detection
  - Decreased amount of urine is one sign
  - Blood test: increase in creatinine and other proteins
- Other causes beside myeloma
  - Hypertension
  - Diabetes
  - Some medications
- Treatment
  - Fluids
  - Avoid nonsteroidal anti-inflammatory drugs such as Aleve, Advil/Motrin
  - Plasmapheresis
  - Treat other causes
  - Dialysis (severe)
Why stem cell transplant?

- Aggressive treatment is key to long periods of remission and a longer life
  - Clear out the myeloma with initial treatment
  - Go to transplant with as little disease as possible
- Getting treatment is key to getting rid of or lessening the symptoms of myeloma

What does transplant mean?

Understanding the Basics of Autologous Stem Cell Transplantation

- Hematopoietic or blood-forming cells— which reside in the bone marrow and can produce all types of blood cells including white blood cells, red blood cells, and platelets—are stimulated to move to the blood stream and are collected from the patient.
- The patient receives high-dose chemotherapy—melphalan—to eradicate all of the myeloma cells in the blood and bone marrow.
- Because melphalan can also reduce the normal cells in the bone marrow, a stem cell transplant (or reinfusion) with the previously collected cells is the next step to replenish the bone marrow.
Preparing for Transplant: It Takes a Village

Nurse coordinator
Physician assistant/nurse practitioner
Physician
Clinical nurse
Social worker

Overview: ASCT

1. Induction therapy
   ~4–6 cycles
2. Collection of stem cells from the bloodstream
3. Freezing of stem cells
4. High-dose chemotherapy
   • Melphalan
5. Thawing and infusion of stem cells
6. Recovery

Stem cell mobilization
• Neupogen
• Cytoxan
• Mozobil
Outpatient transplant: is it safe?

Benefits
• Allows patients to spend nights in the comfort of their own home or on-campus housing
  – Encourages greater movement, optimizing certain physiologic function
  – Being with family and friends is beneficial to overall state of mind during treatment
• The same health care team oversees both inpatient and outpatient programs

Process
• Daily visits to the infusion center
• Labs are drawn, infusions and IVs administered
• Patients are in a private treatment bay
• Typically spend 5–6 hours a day at the center
• Goal is to keep the patient from being hospitalized!

Caution
• A fever will require hospitalization, and it is easy to admit a patient from the infusion center or home to the inpatient unit

More than 60% of patients having transplant as outpatient will not be admitted to the inpatient setting.

Role and Duties of the Designated Caregiver

• Critical role in treatment process and essential for good outcome
• Ensure that patient visits outpatient transplant unit daily
• Monitor patient for bleeding and signs of infection such as fever
• Ensure that patient takes the correct dosage of medications on time
• Help the patient follow guidelines to prevent infection and illness, such as proper hygiene, nutrition, hydration, and sleep
• Be able to contact medical team with any questions or concerns at any time
Inpatient Transplant

• Traditional way of administering high-dose chemotherapy with stem cell rescue
• Better option for some patients
• Age is no longer an issue; comorbidities and insurance play more of a role in determining whether or not to have your transplant inpatient or outpatient
• The inability to have a caregiver with a patient 24/7 is also a deciding factor in this decision

Side Effects of High-Dose Chemotherapy

<table>
<thead>
<tr>
<th>Fatigue</th>
<th>Nausea &amp; Vomiting</th>
<th>Diarrhea</th>
<th>Mucositis</th>
<th>Low Blood Counts</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Expected</td>
<td>• Symptoms much more manageable with newer antiemetics</td>
<td>• Due to melphalan; it’s what we call regimen related</td>
<td>• Pain, sores in mouth; sore throat</td>
<td>• WBCs will drop to 0, placing patient at risk for infection</td>
</tr>
<tr>
<td>• May last 1–3 months</td>
<td>• Try to prevent nausea</td>
<td>• There are good medications to help</td>
<td>• Due to chemo</td>
<td>• Prophylactic antimicrobials (antiviral, antifungal, and antibiotic)</td>
</tr>
<tr>
<td></td>
<td>– Smaller, more frequent meals</td>
<td>• May include stomach cramping</td>
<td>• Can be very painful</td>
<td>• Fever risk about 1 week after chemo</td>
</tr>
<tr>
<td></td>
<td>– Don’t lie flat immediately after eating</td>
<td>• Encourage small amounts of food, more often</td>
<td>• Pain meds, mouth sores</td>
<td>• Hemoglobin and platelets will drop</td>
</tr>
<tr>
<td></td>
<td>– Minimize food odors</td>
<td>• Avoid milk, milk products, high-fiber foods</td>
<td>• Avoid tart, acidic, salty, spicy foods</td>
<td>• Transfusion with blood/platelets</td>
</tr>
<tr>
<td></td>
<td>– Cold/blend food may be more appealing</td>
<td></td>
<td>• Soft food better tolerated</td>
<td>• Counts begin to recover 10–12 days after chemo</td>
</tr>
</tbody>
</table>

Fatigue

Nausea & Vomiting

Diarrhea

Mucositis

Low Blood Counts
You’re done with transplant. Now what?

- Rest
- Improved nutrition
- Exercise
- Infection prevention
- Antiviral and antibiotics for 6–12 months following treatment
- Re-stage myeloma 6–8 weeks after transplant
- Ongoing follow up with your doctor
- Avoid crowds

Chemotherapy After Transplant

- No standard for implementation after transplant
- Most studies show improvement in progression-free survival and even overall survival, particularly for high-risk patients
- Clinical trials are an option
- Each patient is different—every recommendation for chemotherapy following transplant is different based on a wide variety of factors such as response to initial treatment and chromosome abnormalities

Consolidation

The option to continue chemotherapy after transplant is different for each patient. However, the decision should be made by the treating team based on the patient’s response to initial treatment and other factors.

Maintenance

Chemotherapy may be continued for several more years to slow disease progression or to delay disease relapse. This approach is often referred to as maintenance chemotherapy.
Psychosocial Concerns

- Fear of disease recurrence
- How to resume a “new normal” life
- Child care issues
- Works issues/disability
- Anxiety
- Depression
- Shock
- Fear
- Confusion
- Loss of control/independence
- Frustration

What is your coping mechanism?

- Seek information
- Share/talk with others
- Distraction/forget
- Anger
- Humor
- Keep it inside
- Optimism
- Pessimism
- Faith/prayer
- Journal
- Music/art
Psychosocial Interventions

- Social worker
- Support groups for patients and caregivers
- Individual or family counseling
- Yoga/meditation/reiki
- Medications

MMRF Resources

- Multiple Myeloma Disease Overview brochure
- MMRF CoMMunity Gateway: www.mmrfcommunitygateway.org
- Multiple Myeloma Treatment Overview brochure
Transplant Resources

- Blood & Marrow Transplant Information Network
  - www.bmtinfonet.org
- National Bone Marrow Transplant
  - www.comnet.org/nbmtlink
- BMT Support Online
  - www.bmtsupport.org
- National Transplant Assistance Fund
  - www.helphopelive.org
- Bone Marrow Foundation
  - www.bonemarrow.org

Handbooks for Patients and Caregivers
Resources and Support

- Leukemia/Lymphoma Society – www.lls.org
- Cancer Care – www.cancercare.org
- American Cancer Society – www.cancer.org
- Livestrong.org
- Local office on Aging
- Meals on Wheels Programs
- Cancer Hope Network – Cancerhopenetwork.org
- Assisted Living Facilities
- Skilled Nursing Facilities
- Patient Advocate Foundation
- Family Caregiver Alliance
- Adult Day Care
- Respite Care (state programs)

Questions & Answers
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Webinar 2, March 16, 2017
Amy Pierre, RN, MSN, ANP-BC

Additional Resources for You!

Have questions about the trials or information you heard today?
Call our MMRF nurse specialists.

An MMRF nurse specialist can guide you through your multiple myeloma journey every step of the way. Call Monday–Friday, 9–7 ET

Call now
1-866-603-MMCT(6628)

MMRF 2017 Multiple Myeloma Summits

Saturday, March 25, 2017
Denver, Colorado
Robert M. Rifkin, MD–Chair
University of Colorado Denver
Rocky Mountain Cancer Centers

Saturday, April 8, 2017
Atlanta, Georgia
Sagar Lonial, MD–Chair
Emory University

Saturday, April 29, 2017
Boston, Massachusetts
Paul G. Richardson, MD–Chair
Harvard Medical School
Dana-Farber Cancer Institute

Saturday, May 6, 2017
Dallas, Texas
Larry Anderson, MD, PhD–Chair
University of Texas Southwestern Medical Center

Saturday, September 16, 2017
Chicago, Illinois
Andrzej Jakubowiak, MD–Co-Chair
University of Chicago Medical Center
Todd Zimmerman, MD–Co-Chair
University of Chicago Medical Center

Saturday, October 14, 2017
Charlotte, North Carolina
Saad Z. Usmani, MD–Chair
Levine Cancer Institute

Friday, November 3, 2017
New York City, New York
Sundar Jagannath, MD–Chair
The Mount Sinai Medical Center
Tisch Cancer Institute
Mount Sinai School of Medicine

Saturday, November 18, 2017
Los Angeles, California
James Berenson, MD–Co-Chair
Institute for Myeloma and Bone Cancer Research
Amrita Y. Krishnan, MD–Co-Chair
Judy and Bernard Briskin Center for Multiple Myeloma Research
City of Hope Medical Center

https://www.themmrf.org/patient