MULTIPLE MYELOMA Research Foundation

Opening Remarks

Anne Quinn Young, MPH
MMRF

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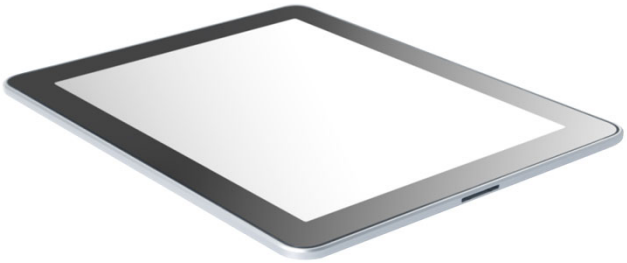
iPads

- To view the materials for this Summit, please log on to the iPad with your e-mail address
  - View slides
  - Answer questions
  - Take notes
  - Submit questions to panel
  - Program evaluation



Submit your questions throughout the program!

Throughout the Summit, use the same e-mail address to log on to any iPad.

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Program Faculty

Fred Hutch Cancer Center, University of Washington School of Medicine

Andrew J. Cowan, MD

Kara Cicero, MD, MPH

Andrew Portuguese, MD

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Objectives

- Increase your understanding of lab tests and what the results mean
- Know the standard treatment options available for your stage of the myeloma journey
- Make more-informed treatment decisions to better manage your myeloma
- Discuss with your care team whether a clinical trial is a good option for you
- Be aware of and utilize resources provided by the MMRF and other reputable sources

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Summit Agenda

Time (PT)	Topic	Speakers
9:00 – 9:15 AM	Introduction to MMRF	Anne Quinn Young, MPH
9:15 – 9:30 AM	Welcome	Andrew J. Cowan, MD
9:30 – 9:45 AM	Smoldering Multiple Myeloma	Andrew J. Cowan, MD
9:45 – 10:00 AM	Treatment for Newly Diagnosed Multiple Myeloma	Andrew J. Cowan, MD
10:00 – 10:15 AM	Treatment for Relapsed/Refractory Multiple Myeloma	Andrew Portuguese, MD
10:15 – 10:25 AM	Town Hall Q&A	Speaker panel
10:25 – 10:40 AM	Break	
10:40 – 10:55 AM	Managing Symptoms and Side Effects	Kara Cicero, MD, MPH
10:55 – 11:10 AM	Town Hall Q&A	Speaker panel
11:10 – 11:45 AM	Lunch	
11:45 – 12:00 PM	Three Patient Stories Highlight Healthcare System Challenges	Connie Missimer, Patient Advocate
12:00 – 12:15 PM	Closing Remarks	Veronica Bohorquez-Medd, MA

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MULTIPLE MYELOMA Research Foundation

MMRF Introduction

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Framework for Our 5-Year Strategic Plan

Our 5-year strategic plan is anchored by three strategic objectives, with a centralized focus on DEI and health equity.

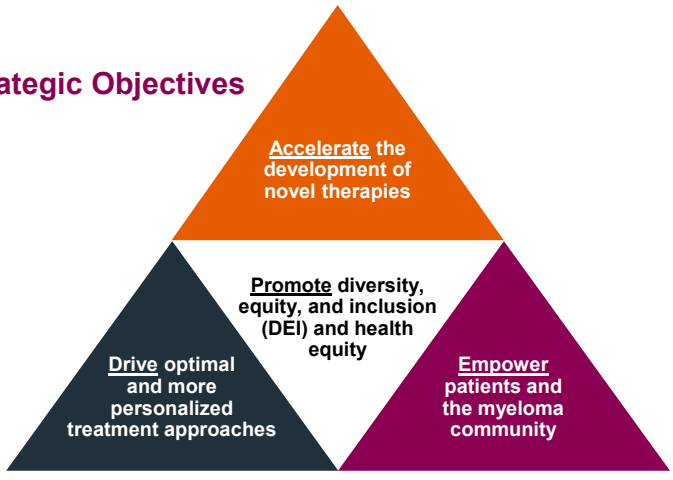
Our Vision

A world free of multiple myeloma

Our Mission

To accelerate a cure for each and every multiple myeloma patient

Strategic Objectives



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Unprecedented results

15+

We've helped bring **15 different multiple myeloma drugs into the market.**

80+

We've opened over **80 clinical trials.**

10+

Our work and collaboration has helped **patient survival rates increase from 3 years to 10.**

90%

90% of our expenses go to research and related programming.

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Accelerating New Therapies

The MMRF is committed to acting with urgency to ensure that patients always have effective treatments available when they need them.

Investing in companies with early-stage assets

Investing capital in small private and midsize public companies with promising early-stage assets through the Myeloma Investment Fund.

Advancing new clinical programs and speeding trials

Providing funding and infrastructure to speed trials of novel agents and combinations through our clinical network of 13 sites—the Multiple Myeloma Research Consortium; sponsor multiarm platform studies in specific patient populations with unmet need (for example, Horizon). **Horizon 1 is now open!**

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Driving Personalized Treatment Approaches

The MMRF continues to lead in the creation, sharing, and analysis of large data sets, as well as in catalyzing collaborative research to answer critical questions and drive precision medicine approaches.

Spearheading targeted, collaborative initiatives

Deploying resources and funding to catalyze collaborative, multiomic research focused in areas of high unmet need and generating hypotheses for clinical exploration (for example, TRU and MAC).

Analyzing and sharing MMRF-generated large data sets

Building data sets and making all MMRF-generated and/or supported data available to researchers and driving analysis to inform new hypotheses and more personalized treatment approaches (Virtual Lab).

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Empowering and Activating the Community

The MMRF is committed to ensuring that the entire myeloma community has the information, resources, and tools to increase survival and improve the quality of life of every myeloma patient, on the path to a cure.

Delivering best-in-class hub for support and education

Providing high-quality education to patients, caregivers, and healthcare providers, with a strong focus on addressing the needs of traditionally underserved patients.

Supporting the careers of BIPOC researchers and clinicians

Creating a fellowship program and supporting other initiatives to increase the number of BIPOC (especially Black) researchers and clinicians in the myeloma field.

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Welcome!

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Question

Are you a...

1. Patient
2. Caregiver (family member or friend who helps patient manage his or her disease)
3. Other

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Question

At what stage is your myeloma? (If you are a caregiver, what is the stage of the patient's myeloma?)

1. Newly diagnosed
2. Relapsed/refractory
3. Remission: still on therapy
4. Remission: not on therapy
5. MGUS or smoldering myeloma not currently requiring treatment
6. Other
7. I don't know.

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Question

Have you had a stem cell transplant?

1. No, but I will soon!
2. No, but I am considering one (or my doctor is discussing with me).
3. No, my doctor tells me I am not a candidate.
4. Yes
5. Not applicable

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Question

Do you know if you had any molecular characterization performed on your bone marrow biopsy sample, such as FISH, cytogenetics, or DNA sequencing?

1. No
2. Yes, I had FISH.
3. Yes, I had cytogenetics.
4. Yes, I had sequencing.
5. Yes, I had more than one of these tests performed.
6. I don't know.

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Question

Have you and your care team ever discussed the possibility of you joining a clinical trial? (If you are a caregiver, do you know if joining a clinical trial has ever been discussed?)

1. Yes
2. No
3. I don't know.

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Smoldering Multiple Myeloma

Andrew J. Cowan, MD

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Objectives

At the conclusion of this presentation, you should be better able to:

- Know how smoldering multiple myeloma differs from multiple myeloma
- Understand why some smoldering multiple myeloma patients are at higher risk of progressing to multiple myeloma than others and how that impacts monitoring and treatment

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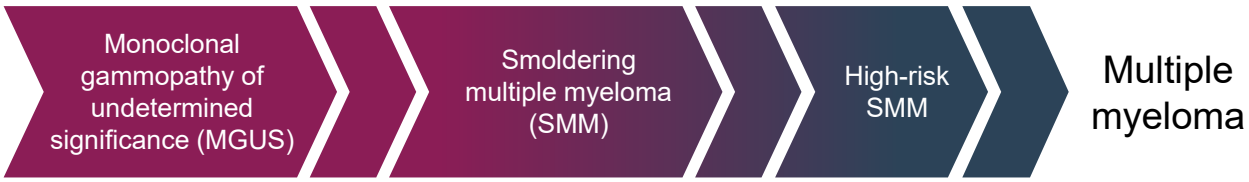
The Multiple Myeloma Disease Spectrum

Almost all patients diagnosed with multiple myeloma have had a preceding phase of disease that is characterized by changes in the bone marrow.



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Blood, Urine, Bone Marrow, and Imaging Tests Used to Identify MGUS, SMM, or Active Multiple Myeloma

	MGUS	SMM	Active MM
M protein	<3 g/dL in blood	≥3 g/dL in blood **or** ≥500 mg/24 hrs in urine	≥3 g/dL in blood ***or*** ≥500 mg/24 hrs in urine
Plasma cells in bone marrow	<10%	≥10%–60%	≥60%
Clinical features	No myeloma-defining events*	No myeloma-defining events*	≥1 myeloma-defining event*, including either: • ≥1 CRAB feature ***or*** • ≥1 SLiM feature

*CRAB, calcium elevation, renal insufficiency, anemia, bone disease; SLiM, >60% plasma cells in bone marrow, free light chain involved to uninvolved ratio >100, >1 focal lesion on MRI

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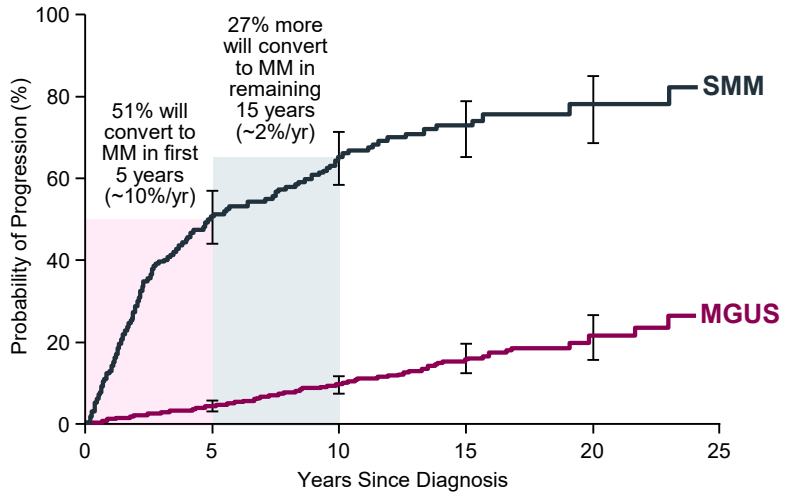
Risk of Progression to Myeloma From a Precursor Condition



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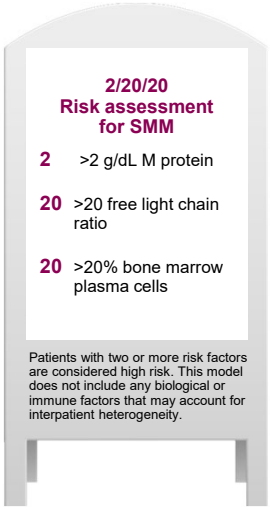
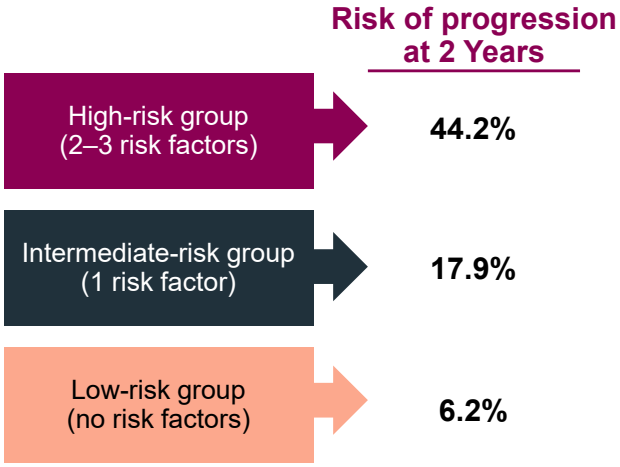
Risk Assessment in Smoldering Myeloma: 2/20/20 Model to Identify High-Risk SMM Patients





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Personalized Progression Prediction in Patients With MGUS or SMM (PANGEA)

A new model to assess risk of progression using accessible time-varying biomarkers

Improves prediction of progression from SMM to multiple myeloma compared with the 20/2/20 model

Biomarkers tested include:
- Monoclonal protein concentration
- Free light chain ratio
- Age
- Creatinine concentration
- Bone marrow plasma cell percentage + hemoglobin trajectories

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Can we identify everyone who has a precursor condition?

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Studies Focusing on Myeloma Precursor Conditions

Large ongoing precursor studies

Iceland

iStopMM
Iceland Screens, Treats or Prevents Multiple Myeloma

Focus: role of population screening

United States and Canada

THE PROMISE STUDY

Focus: racial disparities and familial aggregation

United States

TRANSFORMM study

Focus: genomic markers of progression

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Prevalence of SMM

iStopMM Study

Individuals 40 years of age or older in Iceland enrolled

↓

Screened for M protein and abnormal free light chain

Key Observations

- SMM prevalence is 0.53% in individuals 40 years or older
- **One third of SMM patients have an intermediate or high risk* of progression to myeloma**

*Based on the 2/20/20 risk stratification model where three risk factors are associated with progression to active myeloma: (1) M protein levels, (2) free light chain ratio, and (3) the number of plasma cells in the bone marrow.

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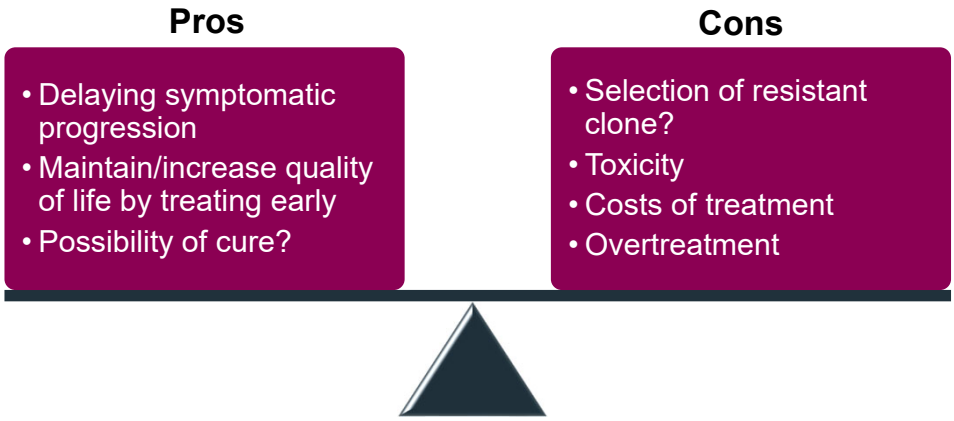
Pros and Cons With Treating SMM



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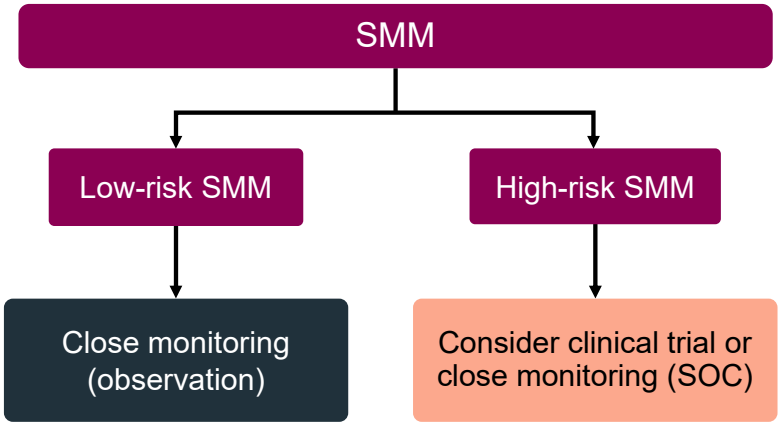
Overview of Current Treatment Approach



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Close Monitoring and Observation Recommendations for Low-Risk SMM

Observation remains the standard of care for patients with low-risk SMM by the 20-2-20 criteria

Every 3–4 months, patients should be monitored for:

- Serum M protein
- Serum FLC levels
- Complete blood count
- Serum calcium
- Serum creatinine

The interval for follow-up can be reduced to once every 6 months after the first 5 years

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Approaches to High-Risk SMM Treatment: *Only in the Context of a Clinical Study*

Low-efficacy therapy
(control approach)

High-efficacy therapy
(curative intent)

Pros
- Fewer side effects
- More likely to induce long-term effects

Cons
- Low ORR
- Does not eliminate the clone

Pros
- High ORR
- Deep responses

Cons
- Toxicity similar to myeloma treatment
- May result in resistant clones

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Summary

- SMM causes plasma cells in the bone marrow to grow faster than normal and produce monoclonal protein (M protein), which can be detected in the blood or urine.
- People who have SMM are at risk of developing myeloma.
- Data show benefit with early intervention for patients with SMM.
- Patients with high-risk SMM should be offered treatment on clinical trials.
- Participation in observational/interventional studies is key to finding out which patients can benefit the most from early treatment and what is the best treatment to offer early. To identify molecular markers of progression vs stable disease.

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Please take a moment to answer two questions about this presentation.

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Treatment for Newly Diagnosed Multiple Myeloma

Andrew J. Cowan, MD

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Objectives

At the conclusion of this presentation, you should be better able to:

- Know the first steps to take after receiving a myeloma diagnosis
- Understand the routine lab and imaging tests used to diagnose, assess and monitor your myeloma
- Know the standard of care treatments for newly diagnosed multiple myeloma
- Access information that will support an informed decision about treatment selection

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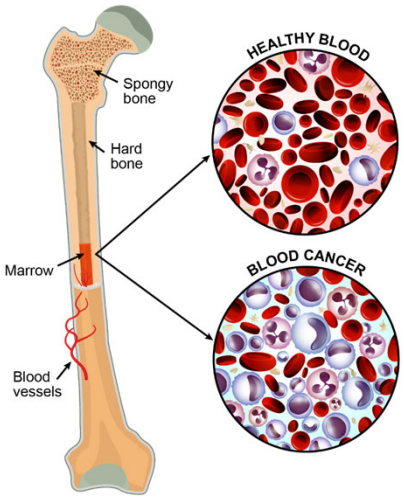
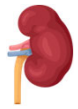
Multiple Myeloma Affects Your Bones, Blood, and Kidneys



What is multiple myeloma?

- Multiple myeloma is a *blood cancer* that starts in the *bone marrow*, the place where all blood cells are produced
- Multiple myeloma is caused when a type of white blood cell called a *plasma cell* becomes cancerous and grows out of control

How does it affect the body?



Large amounts of M protein can overwork or damage the kidneys.

Myeloma cells can activate bone destruction.

Abnormal plasma cells can crowd out normal blood cells.

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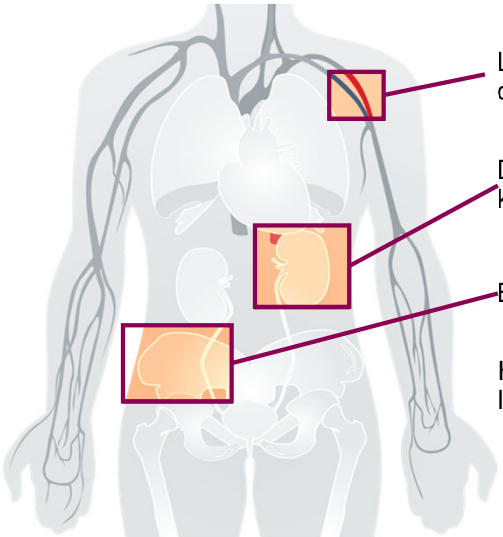
Effects of Myeloma and Common Symptoms



Low blood counts	→	• Weakness • Fatigue • Infection
Decreased kidney function	→	Weakness
Bone damage	→	Bone pain
High calcium levels	→	• Confusion • Constipation • Nausea • Weakness

About 10% to 20% of patients with newly diagnosed myeloma do not have any symptoms.

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Get on the Right Track

Key steps for the best possible care for myeloma patients.

THE RIGHT TRACK

Right Team
Access experts and centers that have extensive experience treating multiple myeloma

Right Tests
Get the information, tests and precise diagnoses to make the right treatment decisions

Right Treatment
Work with your team to decide on the best treatment plan and identify clinical trials that are right for you

Share at Every Step

You can help yourself while helping others.

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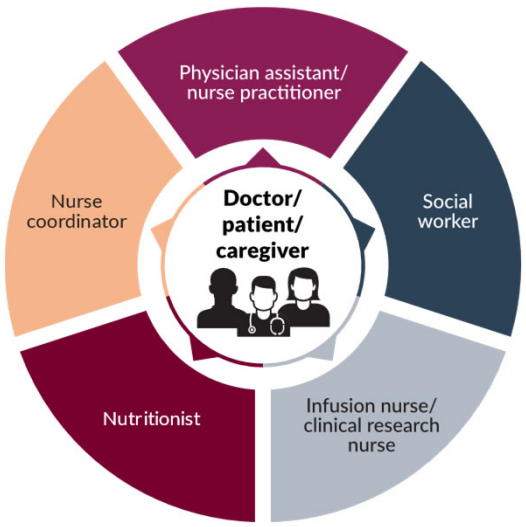
The Right Team



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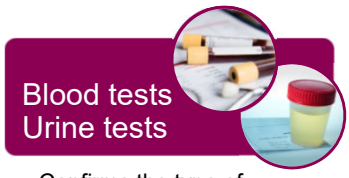
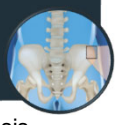
The Right Tests: Common Tests Conducted in Myeloma Patients



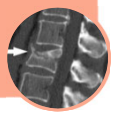
Blood tests
Urine tests

- Confirms the type of myeloma or precursor condition
- Includes complete blood count, comprehensive metabolic profile, beta-2 microglobulin, quantitative immunoglobulins, and urinalysis, among others



Bone marrow biopsy

- Confirms diagnosis of myeloma
- Determines how advanced the myeloma or precursor condition is



Imaging tests

- Detects the presence and extent of bone disease and the presence of myeloma outside of the bone marrow
- Includes x-ray, MRI, CT scan, and PET scan

Genetic tests

- Conducted using myeloma cells from biopsy and gives insights into risks and prognosis
- Includes karyotyping, FISH, and DNA sequencing

MRI, magnetic resonance imaging; CT, computed tomography; PET, positron emission tomography; FISH, fluorescence in situ hybridization; DNA, deoxyribonucleic acid

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Multiple Myeloma Prognosis and Risk Is Determined by Staging

Many blood test and bone marrow biopsy test results can determine a patient's risk for myeloma that is aggressive (high risk) or not (standard risk) based on the R-ISS

Standard risk

- Blood test results
  - Low β2M level
  - High albumin level
  - Normal LDH level
- Bone marrow biopsy results
  - No high-risk chromosomal abnormality*

All other possible combinations of the test results

High risk

- High β2M level
- High-risk chromosomal abnormality* *or* high LDH level

*High-risk chromosomal abnormality by FISH: del(17p) and/or t(4;14) and/or t(14;16)

R-ISS, Revised International Staging System; β2M, beta-2 microglobulin; LDH, lactate dehydrogenase; R2-ISS, second revision of the International Staging System

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Getting the Right Treatment: Goals of Multiple Myeloma Therapy

- Reduce disease burden as low as possible with the aim of reducing the number of myeloma cells to undetectable levels.
- Improve quality of life with as few treatment side effects as possible.
- Provide the longest possible period of response before relapse.
- Prolong overall survival.

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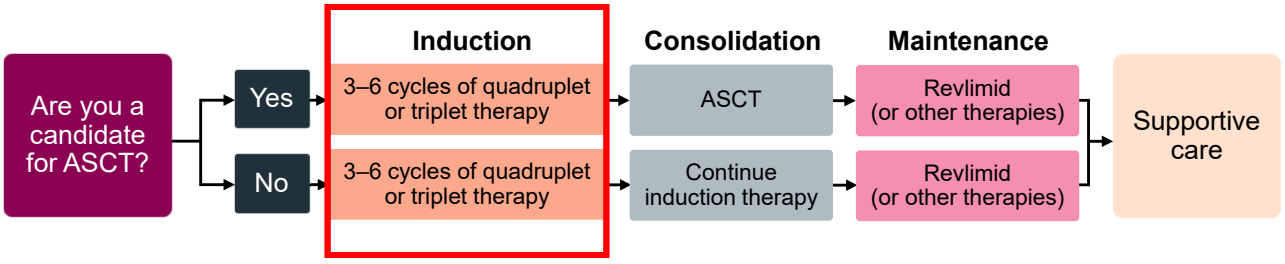
Overview of Treatment Approach for Active Multiple Myeloma



ASCT, autologous stem cell transplantation

Induction, initial treatment given to a newly diagnosed patient; consolidation, treatment given to a patient after initial treatment to target remaining cancer cells; maintenance, treatment given over a long period to patients in remission to reduce the risk of relapse

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Introduction to Myeloma Medications

Proteasome inhibitors	Immunomodulatory drugs	Anti-CD38 monoclonal antibodies
• Velcade (bortezomib), under the skin injection • Kyprolis (carfilzomib), infusion • Ninlaro (ixazomib), pill	• Revlimid (lenalidomide), pill • Pomalyst (pomalidomide), pill	• Darzalex (daratumumab), under the skin injection • Sarclisa (isatuximab), infusion

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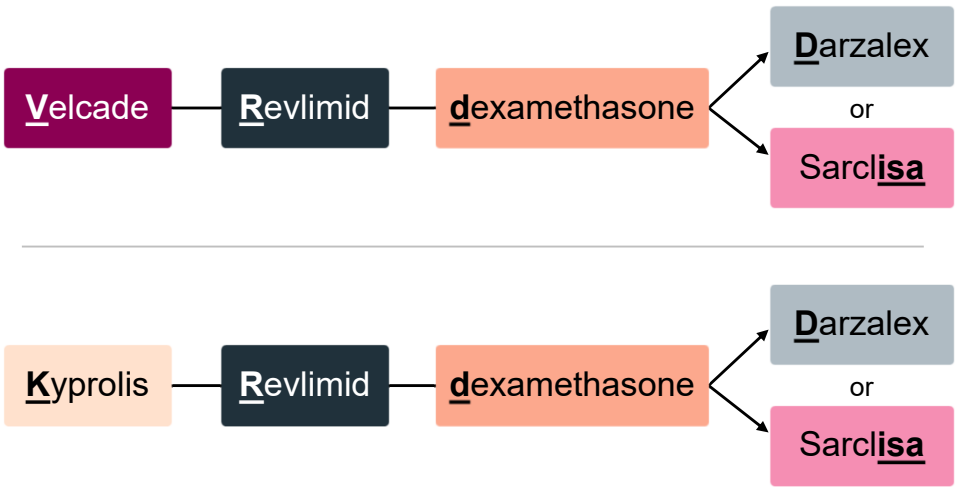
Induction Therapy Regimens: Main Triplets and Quadruplets



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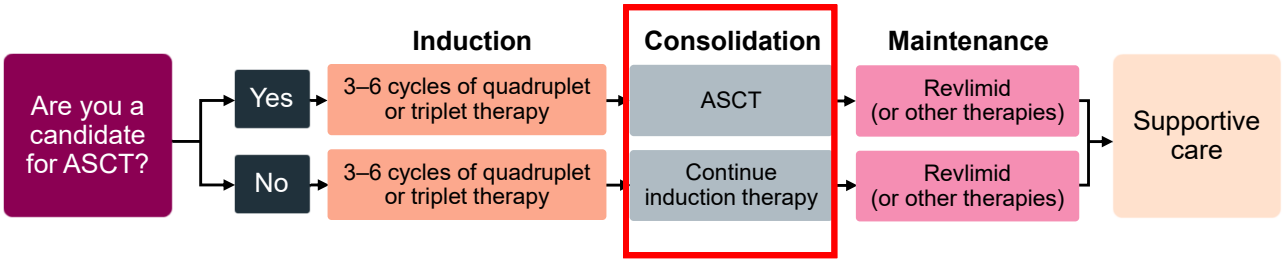
Overview of Treatment Approach for Active Multiple Myeloma



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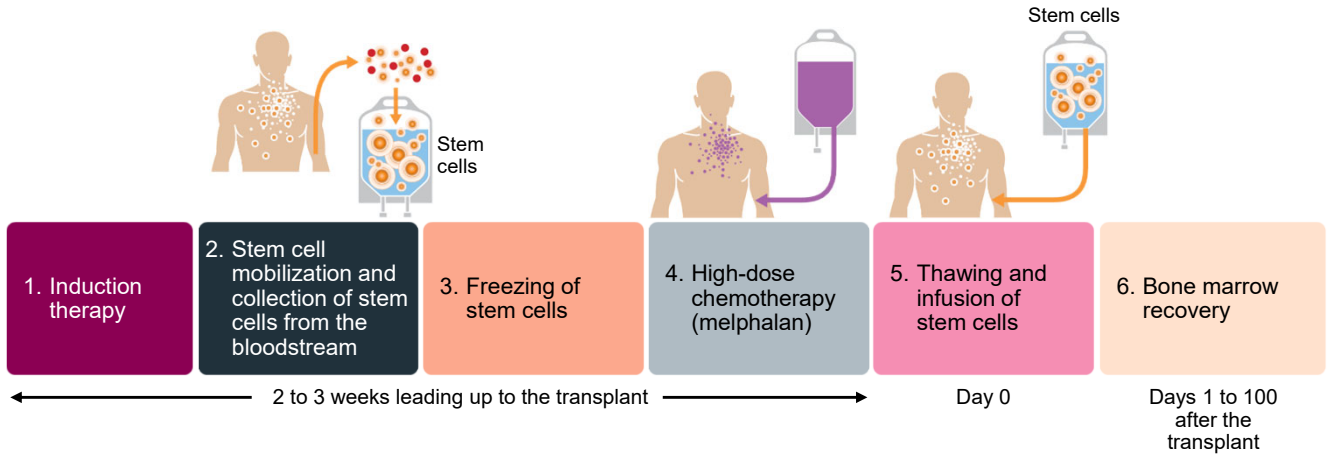
Autologous Stem Cell Transplantation



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ASCT Considerations

Suitability for ASCT is based on overall health

You will need a caregiver after ASCT

Recovery takes several months

ASCT, autologous stem cell transplantation

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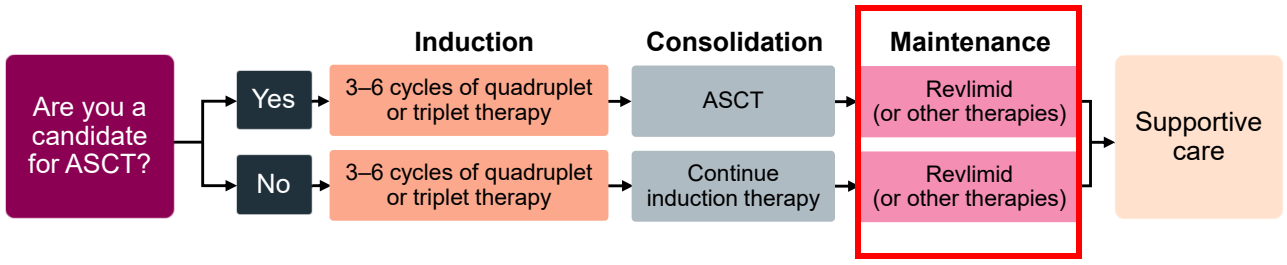
Overview of Treatment Approach for Active Multiple Myeloma



ASCT, autologous stem cell transplantation

Induction, initial treatment given to a newly diagnosed patient; consolidation, treatment given to a patient after initial treatment to target remaining cancer cells; maintenance, treatment given over a long period of time to patients in remission to reduce the risk of relapse

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Maintenance Therapy Following a Stem Cell Transplant

A prolonged and often less-intensive treatment after achieving a response to initial therapy

To prevent disease progression for as long as possible while maintaining favorable quality of life

To deepen responses by reducing minimal residual disease (MRD)

- Options
  - Revlimid alone or with:
    - Kyprolis
    - Darzalex
    - Velcade
  - Ninlaro

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Measuring Response to Therapy

Response to treatment is measured in terms of the reduction of myeloma cells → Responses range from stable disease (no change in the number of myeloma cells) to stringent complete response (no myeloma cells)

Degree (or depth) of response is usually associated with better prognosis → Some patients do well despite never achieving a complete response

Requires blood tests and bone marrow biopsy

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MRD Testing Requires Bone Marrow Biopsy + Imaging Tests

If standard tests find no myeloma remaining in your body, your doctor may test you for the presence of MRD.

TEST RESULTS

MRD positive (+)
Myeloma cells are still detected

MRD negative (−)
Myeloma cells are ***not*** detected

MRD negativity has been associated with longer time until disease progression and longer survival.

MRD, minimal residual disease

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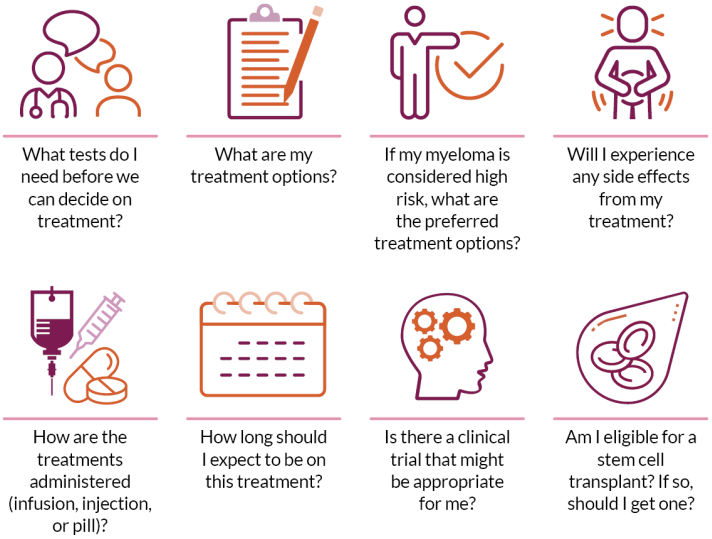
Questions to Ask Your Care Team About Treatment



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Summary

- Patients are living longer because of new drugs and new combinations of drugs.
- Quadruplet regimens are becoming the new standard treatment for newly diagnosed myeloma patients.
- Maintenance therapy helps patients extend time before relapse.
- The outlook for patients with myeloma will continue to improve with the approval of additional new agents.

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Please take a moment to answer two questions about this presentation.

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Treatment for Relapsed/Refractory Multiple Myeloma

Andrew J. Portuguese, MD

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Objectives

At the conclusion of this presentation, you should be better able to:

- Know what is considered relapsed/refractory multiple myeloma
- Know the options available to treat relapsed/refractory multiple myeloma patients who have had fewer than four lines of treatment versus those who have had four or more
- Know what to expect on CAR T-cell or bispecific antibody therapy for relapsed/refractory multiple myeloma
- Talk to your care team about treatment options or clinical trials available to you

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What is relapsed/refractory disease and a line of therapy?

- ***Relapsed:*** recurrence (reappearance of disease)
- ***Refractory:*** treatment no longer works
- ***Progression:*** increase in M protein/light chain values
- ***Line of therapy:*** change in treatment that is not working or has unmanageable side effects
  - **Note:** initial (or induction) therapy + stem cell transplant + consolidation/maintenance therapy = 1 line of therapy

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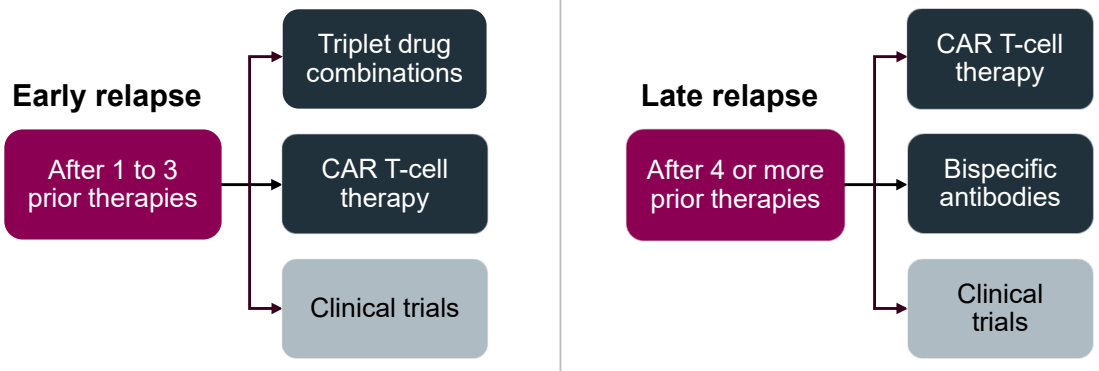
Increasing Options for Patients With Relapsed/Refractory Multiple Myeloma



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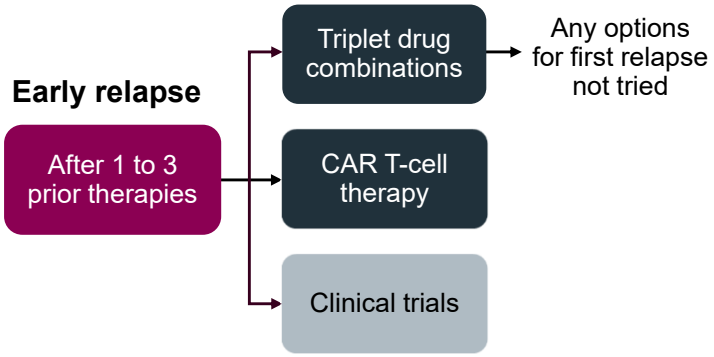
Treatment Choices for Relapse After 1 to 3 Prior Therapies



Choices are guided by

- Disease biology
- Nature of relapse
- Patient preference

Factors to consider

- Prior ASCT
- Prior therapies
- Aggressiveness of relapse
- Comorbidities
- Psychosocial issues
- Access to care

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CAR T-Cell Therapy

Your body's own T cells are modified to find and destroy myeloma cells

Targets BCMA on myeloma cells

Approved CAR T-cell therapies include Abecma and Carvykti

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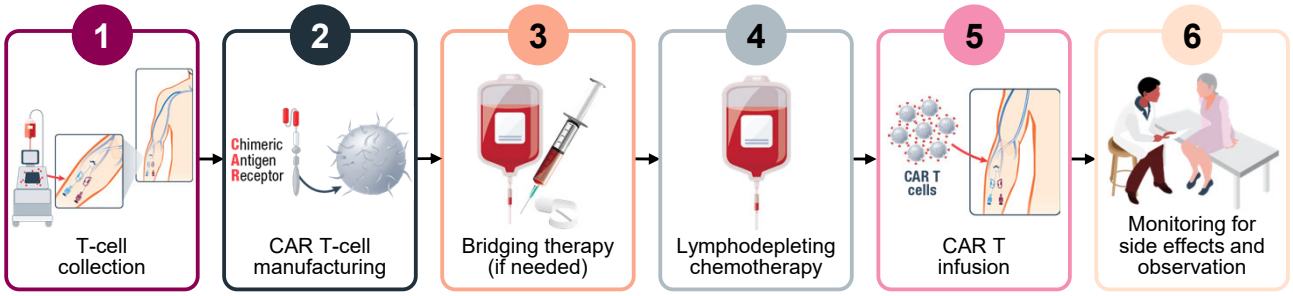
Steps Involved With CAR T-Cell Therapy and What to Expect



One time only

Entire process takes several weeks

Hospitalization times vary

Caregiving necessary for at least 4 weeks after treatment

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CAR T: Expected Toxicities and Management

Side Effect	Symptoms		Onset After CAR T-Cell Infusion	Duration	Treatments
Cytokine release syndrome (CRS)	• Fever • Difficulty breathing • Dizziness • Nausea • Headache	• Rapid heartbeat • Low blood pressure	1–9 days	5–11 days	• Actemra (tocilizumab) • Corticosteroids • Supportive care
Neurotoxicity (ICANS)	• Headache • Confusion • Language disturbance	• Seizures • Delirium • Brain swelling	2–9 days	3–17 days	• Antiseizure medications • Corticosteroids

CAR T-cell therapy can lower white blood cells needed to fight off infection

Hygiene and environment

Vaccinations

Preventive medicines, such as monthly intravenous immunoglobulin (IVIG) treatment or growth factor injections

64

Which CAR T-cell agent to choose?

Most patients respond to treatment, and response lasts for about 1 year.

Carvykti may have higher effectiveness; side-effect profiles are similar.

Carvykti can be used earlier in relapsed patients (after 1 prior line of therapy) than Abecma (after 2 or more prior lines of therapy).

Monitoring for side effects is critical for patients on either therapy.

65

Xpovio: A Selective Nuclear Export Inhibitor

- Works differently than other agents
- Combined with Velcade and dexamethasone for patients who have relapsed after 1 prior therapy
- Once-a-week pill

Nausea, diarrhea

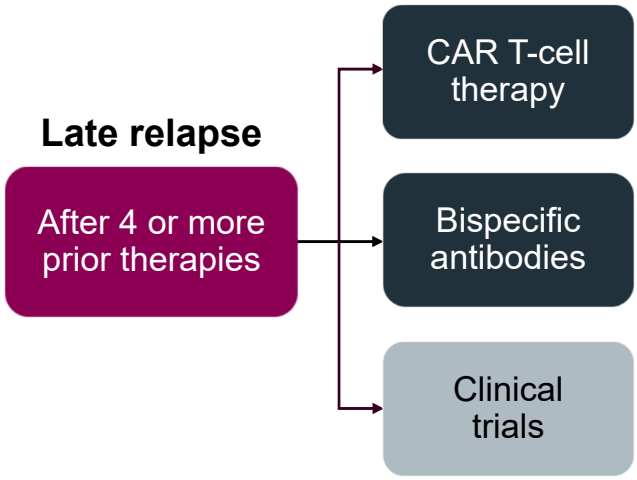
Low sodium levels

Fatigue

Low blood counts

66

Treatment Choices for Relapse After 4 or More Prior Therapies



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Bispecific Antibody Therapy

Monoclonal antibody that can simultaneously bind to two different cell surface markers: one on the myeloma cell and one on a patient's T cells

Myeloma cell targets include BCMA and GPRC5D

Approved bispecific antibody therapies include Tecvayli, Talvey, and Elrexfio

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Bispecific Antibodies
What to Expect?

Available off the shelf, allowing for immediate treatment

Does not require lymphodepletion or other preparation

Administered by subcutaneous (under the skin) injection

To minimize side effects and to monitor patients closely, first two to three doses are administered in the hospital

Requires ongoing administration until disease progression or unacceptable side effects

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Bispecific Antibodies: Expected Toxicities and Management

Cytokine release syndrome (CRS)

Neurotoxicity (ICANS)

Skin changes/rash
Taste changes (dysgeusia)*

Infections

Low blood counts

Talvey-Associated Side Effects

Affected area	Symptoms and effects	Management
Skin	Rash, skin peeling	Not painful; self-limiting, and manageable with emollients
Nails	Nail thinning and loss	Takes time to resolve
Oral	Difficulty swallowing, dry mouth, taste changes	Can lead to weight loss; have longer duration and can affect quality of life. Most successfully managed with dose modification. Supportive measures may be used (eg, NaCl mouth rinse, artificial saliva spray, diet modification)

*Specific to Talvey

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Similarities and Differences Between CAR T-Cell Therapy and Bispecific Antibodies

	CAR T-cell therapy	Bispecific antibody
Approved product	Abecma, Carvykti	Tecvayli, Elrexfio, Talvey
Efficacy	++++	+++
When given	After at least 1 (Carvykti) or 2 or more (Abecma) prior lines of therapy	After at least 4 prior lines of therapy
How given	One-and-done	IV or SC, weekly to every 4 weeks until progression
Where given	Academic medical centers	Academic medical centers
Notable adverse events	CRS and neurotoxicity, close monitoring required	CRS and neurotoxicity, close monitoring required
Cytokine release syndrome	+++	++
Neurotoxicity	++	+
Availability	Wait time for manufacturing	Off-the-shelf
Advantages	• Personalized • Single infusion ("one and done") • Potentially persistent	• Off the shelf • No lymphodepletion • Minimal steroids
Disadvantages	• FACT-accredited center required (hospitalization likely required) • CRS and neurotoxicity • Dependent on T-cell health (manufacturing failures) • Requires significant social support; caregiver required	• Initial hospitalization required • CRS and neurotoxicity • Dependent on T-cell health (T-cell exhaustion) • Requires continuous administration

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Should I get a CAR T or bispecific antibody?

Either option is acceptable for patients with relapsed or refractory multiple myeloma.

Both are associated with the risk of certain side effects.

Wait time is a key difference between these two therapies.

Patient preference and logistics are considerations in deciding between either option.

- CAR T-cell therapy may be the better option if feasible
- A patient may find the "one-and-done" treatment more attractive than ongoing therapy

Bispecific antibodies are often used as a bridge to CAR T-cell therapy.

Treatment selection is part of a conversation with your doctor to determine which will best meet your unique circumstances.

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Additional CAR T Cells and Bispecific Antibodies Under Investigation

For more information contact the MMRF Patient Navigation Center at 1-888-841-6673

To final trial near you, go to the MMRF Clinical Trial Finder

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Relapsed/Refractory Myeloma Clinical Trials at the Fred Hutch Cancer Center

- **Enrolling trials**
  - MonumenTAL-3: Talvey-Darzalex ± Pomalyst vs Darzalex-Pomalyst-dex
  - LINKER-MM3: Linvoseltamab vs Empliciti-Pomalyst-dex
  - STOMP (arm 12): Xpovio-mezigdomide-dex
  - BCL2 inhibitor (BGB-11417) if translocation t(11;14)
- **Upcoming**
  - GPRC5D CAR-T (BMS-986393)
  - Anito-cel (BCMA CAR-T) vs standard of care

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Summary

- We now have many different options for relapsed myeloma depending on patient and myeloma factors at relapse.
- Therapy choices will depend on teamwork between physician, patient, and caregivers and are based on many decision points.
- Combinations of many different drugs with differing mechanisms of action improve time until disease progression.
- CAR T and bispecific antibodies result in high response rates even in patients who have received several prior therapies.
- Patients are encouraged to discuss with their doctor if participation in a clinical trial is a good option for their disease.

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Please take a moment to answer two questions about this presentation.

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Questions?

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Managing Symptoms and Side Effects

Kara Cicero, MD, MPH

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Objectives

At the conclusion of this presentation, you should be better able to:

- Recognize the main symptoms of multiple myeloma and how they are managed
- Recognize common side effects of multiple myeloma treatments and how they are managed
- Talk to your care team about symptoms or side effects that interfere with day-to-day activities

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Symptom or Side Effect?

Symptom → Something a person experiences that may indicate a disease or condition

Side effect → An unfavorable and unintended secondary development that is related to a medical treatment or procedure

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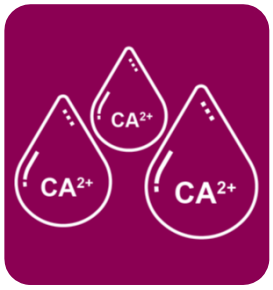
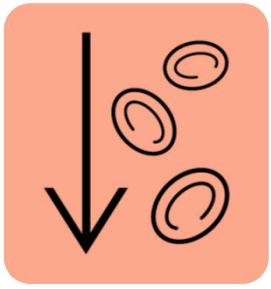
Multiple Myeloma Affects Your Bones, Blood, and Kidneys

The clinical features that are characteristic of multiple myeloma

C	R	A	B
			
High levels of **c**alcium in the blood	Decreased kidney (**r**enal) function	Low amount of red blood cells (**a**nemia)	Presence of **b**one damage

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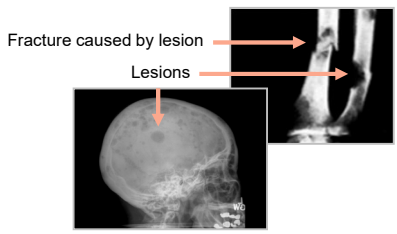
Effects of Myeloma
Bone Disease

- **Symptoms and signs**
  - Increased levels of calcium in the blood (hypercalcemia)
  - Pain
  - Pathologic fractures
  - Spinal cord compression/collapse
    - Weakness of extremities, focal numbness/tingling, bowel and bladder dysfunction
  - Loss of height
- **Treatment**
  - Myeloma-directed therapy
  - Medications that minimize/prevent bone loss:* Zometa (zoledronic acid), Xgeva (denosumab)
  - Bone health support
    - Vitamin D 600–1,000 IU daily + calcium
    - Calcium 1,000–1,200 mg daily



*Risks: atypical and/or rebound fractures, osteonecrosis of the jaw (ONJ; a breakdown of bone in the jaw), kidney injury

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Recommendations for Reducing the Risk of Osteonecrosis of the Jaw (ONJ)

- Complete major dental work before beginning treatment for bone disease
- Practice good oral hygiene
- Schedule regular dental visits
- Let your dentist know that you are receiving treatment for bone disease
- Keep your doctor informed of dental issues/need for dental work; bone modifying agents will likely be held

ONJ, a breakdown of bone in the jaw

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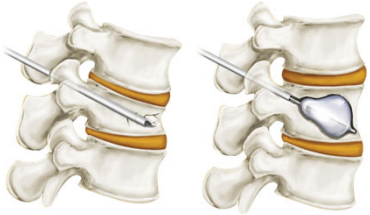
Adjuvant Procedures for Bone Involvement
Surgical and Radiation Intervention

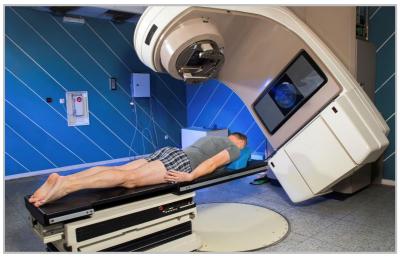
Surgical Intervention

- Minimally invasive procedures
- Can be performed without hospitalization
- Small incision
- Cement filler stabilizes bone
- Potential for relatively rapid symptom relief (approximately 1 month with kyphoplasty)

Vertebroplasty **Kyphoplasty**



Radiation



- Destroys myeloma cells
- Stops bone destruction
- Pain control
- Targeted and localized therapy
- Can affect bone marrow function
- Can affect adjacent tissues

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Pain Management Medications

- Acetaminophen (Tylenol)
- NSAIDs (nonsteroidal anti-inflammatory drugs)*
- Opioids
- Corticosteroids (dexamethasone, prednisone)
- GABA analogues (gabapentin and Lyrica)

Discuss the right option with your health care team. Please let your care team know if you are experiencing any pain.

*Prefer to avoid with multiple myeloma due to increased risk of kidney injury

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Effects of Myeloma
Low Blood Counts

Low red blood cells (anemia)

- **Symptoms**
  - Fatigue; depression/mood changes; difficulty breathing; rapid heartbeat; dizziness
- **Treatment**
  - Identify and treat causes other than myeloma; supplements; medications to increase number of red blood cells; blood transfusions

Low platelets (thrombocytopenia)

- **Symptoms**
  - Easy or excessive bruising; superficial bleeding into the skin; prolonged bleeding from cuts; bleeding from the gums or nose; blood in urine or stool
- **Treatment**
  - Identify and treat causes other than myeloma; platelet transfusion; hold blood thinners

Low white blood cells (leukopenia)

- **Symptoms**
  - Fatigue; frequent infections
- **Treatment**
  - Medications to stimulate production of white blood cells; antibiotics; infection prevention

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Effects of Myeloma
Decreased Kidney Function

- **Symptoms and signs**
  - Decreased amount of urine
  - Increase in creatinine and other proteins
- **Treatment**
  - Fluids
  - Avoid substances that are toxic to kidneys
    - Nonsteroidal anti-inflammatory drugs (NSAIDs) such as Aleve, Advil/Motrin
  - Plasmapheresis (plasma exchange)
  - Treat other causes
  - Dialysis (severe)

87

Side Effects and Management of Multiple Myeloma Therapies

88

Symptom or Side Effect?

Symptom → Something a person experiences that may indicate a disease or condition

Side effect → An unfavorable and unintended secondary development that is related to a medical treatment or procedure

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Myeloma Therapies
Steroid Side Effects and Their Management

Insomnia

- Timing steroids to be taken first thing in the morning
- Split dosing
- Healthy sleep habits

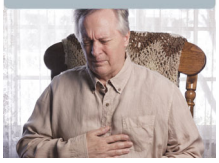
Fluid retention

- Monitor for swelling of extremities and "puffy" face
- Monitor weight changes/gain

Mood changes

- Practice self care-exercise to boost mood; engage in hobbies that bring joy and relaxation
- Talk to friend, family member or support group
- Seek professional support

Dyspepsia-heartburn



- Dietary modifications (avoid spicy, acidic foods)
- Avoid NSAIDs
- Acid-blocking medications
- Take steroid with food; use enteric-coated aspirin with food

Elevation in glucose

- Monitor glucose and refer/treat as needed

90

Common Treatment Side Effects and Their Management

Blood

- Blood clots → blood thinners
- Low blood counts → close monitoring and/or dose adjustment, supportive care*

Cardio-vascular

- Hypertension → monitor closely, antihypertensive medications
- Shortness of breath → assess for blood clot or heart failure; dose adjustment

*Care for the prevention and management of treatment side effects

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Common Treatment Side Effects and Their Management

Central nervous system

- Peripheral neuropathy (disorder of the nerves that can disrupt sensation or cause burning/tingling in the hands and feet) → gabapentin, pregabalin, duloxetine, acupuncture, dose adjustment

Gastro-intestinal

- Constipation → stool softeners, laxatives, fiber
- Diarrhea → Imodium, cholestyramine*, supportive care†, dose adjustment
- Nausea, vomiting → anti-nausea medications, dose adjustment

*Specific to Revlimid; †Care for the prevention and management of treatment side effects

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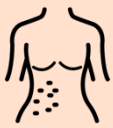
Common Treatment Side Effects and Their Management

 **Respiratory**	• Upper respiratory infections → antibiotics, antivirals, and/or supportive care*
 **Skin**	• Rash → topical treatments, Benadryl and Claritin, and/or dose adjustment
 **Other**	• Fatigue → sleep hygiene, regular exercise, dose adjustment • Infusion reactions → supportive care

*Care for the prevention and management of treatment side effects

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Infection Prevention

- Avoid crowds
- Ensure handwashing, hygiene
- Growth factors
- IVIG for hypo-gammaglobulinemia
- Immunizations
- COVID-19 prevention
- Zoster prophylaxis

IVIG, intravenous immunoglobulin

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Beyond Myeloma Treatment: Taking Care of Yourself

Proper nutrition

- Eating a healthy diet high in fiber-rich foods to boost energy and mood
- Your team may recommend a nutritionist

Exercise

- Getting regular exercise can improve your physical and mental health

Mental health and emotional support

- Support groups are available
- Stress-reducing activities like yoga and meditation can help reduce anxiety

Sleep

- Practice good sleep hygiene (routines, no TV or phone screen close to bedtime)

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Communicating With Your Care Team
Side Effects and Support Services

Talk to your provider about side effects and how to make treatment more tolerable

Questions to Ask

- ❑ What support services are available to me?
- ❑ What financial resources are available to me?
- ❑ Are there any myeloma patient support groups available to me? Are any in my area?
- ❑ What is the best way for me to contact you in case of emergency?
- ❑ Should I tell my other doctors/my dentist about my diagnosis?

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Please take a moment to answer two questions about this presentation.

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Questions?

98

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Three Patient Stories Highlight Healthcare System Challenges

Connie Missimer
Patient and Advocate, Multiple Myeloma
Founder Critical Thinking at Work
conniemissimer@gmail.com

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Overview

- My story
- Two other stories
  - "John"
  - "Anna"
- How we need more time with our doctor
- AMA on how doctors want more time with us
- We need research on
  - Optimal visit length
  - Way to shift paperwork from doctors to
    - AI program?
    - Medical transcriptionists?
- How can we fund this research?

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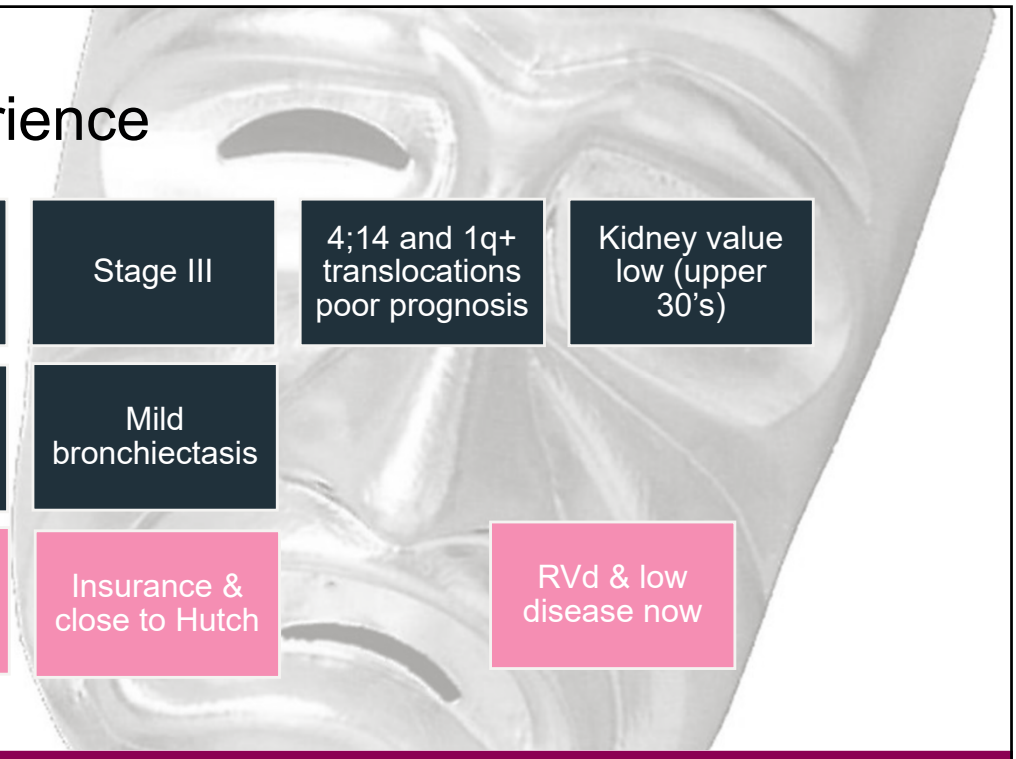
My Experience



November 24, 2021

Stage III

4;14 and 1q+ translocations poor prognosis

Kidney value low (upper 30's)

"Frail" 78

Mild bronchiectasis

No lesions

Insurance & close to Hutch

RVd & low disease now

101

How more doctor time could have helped

We don't know what we don't know

Doctors don't know what we don't know

It takes time to uncover misunderstandings

- I was a strict constructionist!
  - "Any burning, tingling, numbness?"
    - Nope! Except for my neuropatoe
    - I did have "fuzz"
  - "How are you feeling today?
    - Good!
    - But burning stomach at night
- Are you a strict constructionist too?

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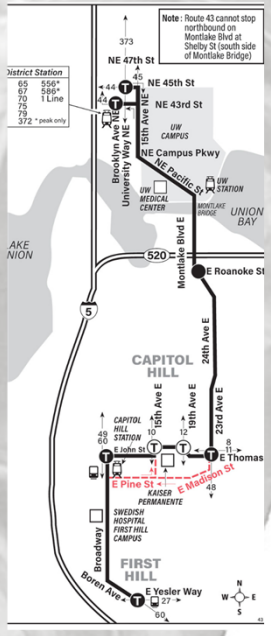
“John”

- 3 buses to his infusion
- Policy to fine patients who are late
- Buses running late
- Took an Uber, spending his month’s food money
- More time could ferret out problems and devise solutions

*Courtesy Dr. Chris Su



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“Anna”

- Lives alone*
- Has to travel 60mi to appts.
- 3 complex complications
  - Amyloidosis, lesions, kidney failure
- Flustered, leaves with questions
- MyChart charges for questions
- Anxiety

*mmfighters98@gmail.com

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Doctors want more time with us

- Almost half burned out, say they want to quit (nationally)
- Hint from late evening MyChart missives (locally)
- "Physicians today, on average, spend about **two hours** on paperwork for every **one hour** we spend with patients."
  AMA President Dr Jesse Ehrenfeld, Oct.2023
- "Get..rid of stupid stuff"
- AMA STEPS Forward® Innovation Academy boot camp
- "… eliminate unnecessary work… to focus on what matters most–patient care."
- Solution: Offload the paperwork
  - AI notetaking program
  - Medical transcriptionist

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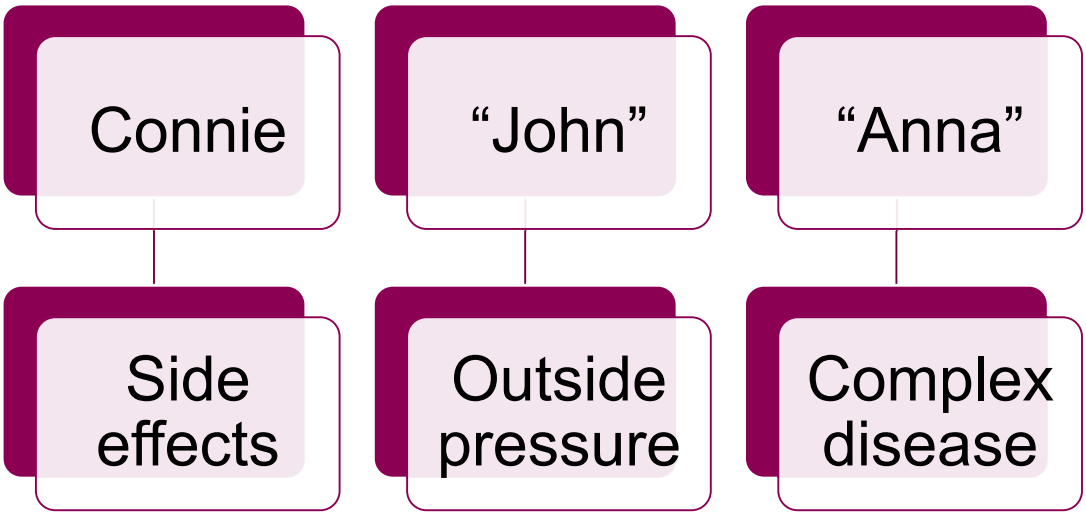
Our stories suggest we need more time



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Thank you!

Questions?

- Are there times you wished you had more time with your doctor?
- Do you have any ideas about next steps enabling this research?

conniemissimer@gmail.com

Please see Bibliography in your Patient Resources for more supporting data

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Thank you!

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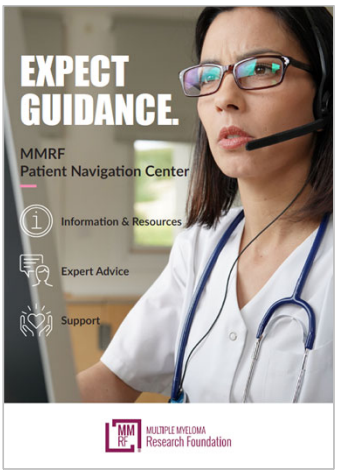
MMRF 1:1 Patient Support Options



Myeloma Mentors®

Myeloma Mentors® allows patients and caregivers the opportunity to connect with trained mentors. This is a phone-based program offering an opportunity for a patient and/or caregiver to connect one-on-one with a trained patient and/or caregiver mentor to share his or her myeloma journeys and experiences.

Scan me!

Contact the Patient Navigation Center at 888-841-6673 to learn more!

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Patient Education Programs 2024

Multi-channel offerings

Patient Summits

Patient Webinars

Myeloma Matters Podcasts

FB Livestreams

Conference Highlights

Nursing Fireside Chats

The MMRF Patient Toolkit

High-Impact Topic Videos

Fast Facts in Myeloma Infographics

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Upcoming Patient Education Events
Save the Date

Program	Date and Time	Speakers
Clinical Studies FAQs *Livestream*	Wednesday, November 20, 2024 4:00 PM ET	Andrew Yee, MD Emerentia Agyemang, C-NP
Understanding Targeted Therapies *Webinar*	Tuesday, December 3, 2024 6:00 PM ET	Cesar Rodriguez, MD Jing Christine Ye, MD, MSc
Highlights from the American Society of Hematology *Webinar*	Thursday, December 12, 2024 4:00 PM ET	Malin Hultcrantz, MD, PhD Shaji Kumar, MD
Understanding Targeted Therapies FAQs *Livestream*	Thursday, January 9, 2025 12:00 PM ET	Ravi Vij, MD, MBA Angela Vickroy, ANP-BC, OCN
American Society of Hematology FAQs *Livestream*	Monday, January 13, 2025 2:00 PM ET	Hans C. Lee, MD Tiffany Richards, PhD, ANP, AOCNP

For more information or to register,
visit **themmrf.org/educational-resources**

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Join the MMRF Community!

National Walk/Run Program

Dallas | 11.16.24
Houston | 11.23.24
Scottsdale | 12.7.24
National Virtual | 12.14.24

Other MMRF Event Programs

- Moving Mountains for Multiple Myeloma
- Half and Full Marathons
- Bike/Road to Victories
- Create Your Own Fundraiser

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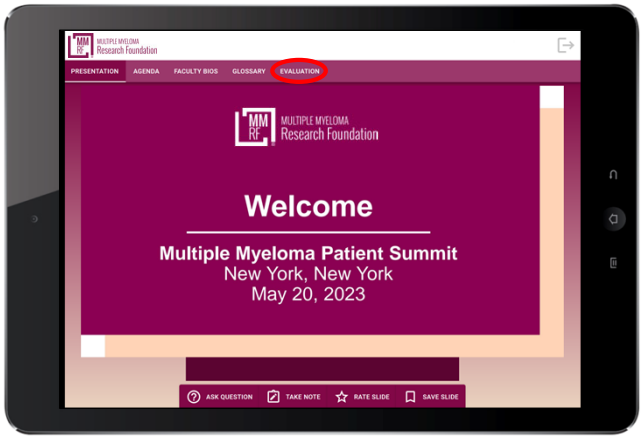
Don’t Forget!

Complete your evaluation
Leave the iPad at your seat



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cure® curetoday.com Genentech A Member of the Roche Group GSK

Johnson&Johnson Karyopharm® Therapeutics LEGEND BIOTECH

Pfizer REGENERON SCIENCE TO MEDICINE® sanofi

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