

Considering CAR-T Cell Therapy

Understanding CAR T-Cell Therapy for Multiple Myeloma



Tech Support





Adaptive ANGEN Bristol Myers Squibb

Advancing MRD measurement. Empowering patient care.







- Resource tab includes
 - Speaker bios
 - Copy of the slide presentation
 - Exhibit Hall

Submit your questions throughout the program!

The MMRF's Mission, Vision & Strategic Plan Objectives

We are not satisfied with current progress; our level of urgency and commitment to achieving cures has never been greater.

Our Mission

To accelerate a cure for each and every multiple myeloma patient.

Our Vision

A world free of multiple myeloma.

Our Strategic Objectives



Delivering On Our Mission

The MMRF acts with urgency to ensure that patients have effective, more personalized treatments available and the resources necessary to increase their survival and improve their quality of life.



Accelerate the Development of Novel Therapies

- Venture philanthropy
- Clinical trials



Drive More Personalized, Optimal Treatment Approaches

- Multi-institutional data generation initiatives
- Open data sharing platform



Empower Patients and the Entire Community

- Educational programming and patient navigation
- Grants to increase researcher and clinician diversity

Learning Objectives

This presentation aims to help you:

- Learn how CAR T-cell therapy is used to treat multiple myeloma
- Understand what to expect when getting CAR T-cell therapy
- Get familiar with the process of CAR T-cell therapy, and learn how to prepare
- Address myths and misconceptions about CAR T-cell therapy

Speaker introduction



Larry D. Anderson, Jr, MD, PhD, FACP

Professor of Internal Medicine

Director of Myeloma, Waldenstrom's, and Amyloidosis Program

Director of Hematologic Malignancies and Cellular Therapy Clinical Research

UT Southwestern Medical Center



Edward Stadtmauer, MD

Section Chief, Hematologic Malignancies

Roseman, Tarte, Harrow, and Shaffer Families' President's Distinguished Professor

University of Pennsylvania

Understanding CAR T-Cell Therapy

What are T cells?

- T cells are an important part of the immune system, which protects the body from infection and disease.
- T cells are one type of white blood cell that attacks cancer cells.
- In patients with multiple myeloma, T cells do not attack myeloma cells like they should.
- CAR T-cell therapy reprograms T cells to better target and destroy myeloma cells.



What is CAR T-cell therapy?

- A type of immunotherapy that uses genetically modified T cells to fight multiple myeloma.
- CAR T-cell therapy (sometimes called CAR T) is a process that changes your T cells into CAR T cells, which are better at finding and attacking cancer cells.

CAR T cells attack myeloma cells



When is CAR T-cell therapy used to treat multiple myeloma?

CAR T-cell therapy is used to treat multiple myeloma patients whose cancer:

- Has returned after prior treatment (relapsed)
- Is not responding to standard treatments (refractory)
- Current FDA-approved therapies:
 - Abcema® (ide-cel): can be used after 2 or more previous treatments
 - Carvykti® (cilta-cel): can be used after 1 previous treatment
- Ongoing clinical trials are exploring new therapies that may improve effectiveness and safety

CAR T myths

MYTH

CAR T is used only after all other treatments have failed.

FACT

CAR T is not a "last option." In fact, it is increasingly used to treat patients earlier in their disease.

What are the outcomes of CAR T-cell therapy?

Clinical trials and real-world data have shown promising response rates, progression-free survival rates, and overall survival rates that are greater than other standard of care treatments.

Response Rates

KarMMa-3 study of Abecma vs Standard of Care after 2-4 prior treatments:

> 71% (CAR T) vs. 42% (standard therapy)

CARTITUDE-4 study of Carvykti vs Standard of Care after 1-3 prior treatments:

> 85% (CAR T) vs. 67% (standard therapy)

Progression-Free Survival Rates

KarMMa-3 study of Abecma vs Standard of Care after 2-4 prior treatments:

14 months (CAR T) vs. 4 months (standard therapy)

CARTITUDE-4 study of Carvykti vs Standard of Care after 1-3 prior treatments:

> >30 months (CAR T) vs. 12 months (standard therapy) (76% vs 64% Alive at 30 months)

What is the process of getting CAR T?



CAR T myths

MYTH

CAR T-cell therapy replaces a stem cell transplant.

FACT

CAR T may be a treatment option for patients who are not candidates for stem cell therapy. Other patients may eventually have both a stem cell transplant and CAR T.

CAR T-cell therapy is not a stem cell transplant

CAR T works differently from stem cell transplant.

- CAR T-cell therapy involves collecting and genetically modifying a patient's own T cells so they can fight cancer cells
- Stem cell therapy uses a patient's own stem cells to rebuild their blood supply after high dose chemotherapy

CAR T is used differently from stem cell transplant.

- Patients who are over 75 or have heart disease, kidney disease, lung disease, or other health conditions that make them ineligible for high-dose chemotherapy, and thus are not eligible for a stem cell transplant, may be eligible for CAR T
- Patients whose myeloma does not respond to chemotherapy and are not eligible for stem cell transplant may be eligible for CAR T

Side Effects of CAR T

What are the side effects of CAR T?

Side effects vary from person to person.

- They can be mild to severe, and in some cases lifethreatening, which is why you will have to stay in the hospital for monitoring after receiving CAR T.
- You will need a caregiver throughout your CAR T process. Your caregiver will monitor you closely for signs of side effects.



Cytokine release syndrome (CRS), also known as "cytokine storm"



Neurotoxicity (ICANS) and delayed neurotoxicity



Low blood counts / infection

What is cytokine release syndrome (CRS)?

As CAR T cells multiply, they can release chemicals called cytokines into the blood, which make your immune system go into overdrive.

Cytokine release syndrome (CRS)	Frequency	Onset	Duration	Symptoms	Treatments
	9 out of 10 people who get CAR T-cell therapy will have CRS	1-9 days post-infusion	5-11 days	 Fever, chills Difficulty breathing Dizziness Nausea, vomiting, or diarrhea Headache Rapid heartbeat Low blood pressure 	 Actemra (tocilizumab) Corticosteroids Supportive care

What is neurotoxicity?

CAR T-cell therapy can affect the nervous system, causing a type of neurotoxicity called immune effector cellassociated neurotoxicity syndrome (ICANS) that causes a range of neurological symptoms.

Neurotoxicity	Frequency	Onset	Duration	Symptoms	Treatments
	2-3 out of 10 people who get CAR T-cell therapy will have ICANS	 Early: 2-9 days after having CAR T cell therapy Delayed: several months after 	3-17 days	 Headaches Changes in consciousness Confusion or agitation Seizures Shaking or twitching Trouble speaking and understanding Loss of balance 	 Steroids Supportive care Anti-seizure medications

What are the symptoms of infection?

CAR T-cell therapy can weaken the immune system, leading to infections. Most infections are caused by viruses and bacteria.

Infection	Frequency	Onset	Duration	Symptoms	Prevention and Treatments
	6 out of 10 people who get CAR T- cell therapy get an infection	Within the first few weeks	3-6 months	 Fever Chills/shaking Fatigue Low blood counts 	 Preventative medications (antibiotics, antivirals) Vaccines Immunoglobulins (IVIG) Frequent handwashing and good hygiene practices Make sure foods are thoroughly cooked Avoid large gatherings and crowded spaces Stay hydrated

Rare side effects of CAR T-cell therapy

Some people who have had CAR T develop Parkinsonism or a secondary cancer. Both are extremely rare.

Rare side effect	Frequency	Onset	Symptoms	Treatment/Monitoring
Parkinsonism	Less than 1%	Some patients develop Parkinsonism within days or weeks of having CAR T. Others develop Parkinsonism month after having CAR T	 Moving slowly Stiff muscles Shaking Trouble keeping balance These symptoms often improve or go away over time after CAR T cells are no longer active 	 Occupational and/or physical therapy Drugs that destroy remaining CAR T cells, such as: Steroids Cytoxan, a type of chemotherapy
Secondary cancers	About 0.01%, or 1 in every 10,000 people. This is similar to the risk following other treatments	Usually within 2 years of having CAR T	Symptoms depend on the type and location of the new cancer	People who get CAR T are regularly screened for other cancers

CAR T myths

MYTH

The side effects of CAR T are severe and difficult to manage.

FACT

CAR T-cell therapy side effects can be serious, but doctors have made a lot of progress in understanding how to manage them. Most side effects of CAR T can now be successfully managed with other treatments and usually go away over time.

Moving Forward with CAR T-Cell Therapy

What is the role of the caregiver?

Your caregiver should commit to giving you full-time support before, during, and after CAR T, *including being present 24/7 for 4-8 weeks post-infusion*.

After CAR T, your caregiver will need to monitor you closely for signs of any side effects

- Note changes in mental state (ICANS)
- Watch for signs of CRS (fever, flu-like symptoms)

Your caregiver will also provide essential support, including:

- Helping with daily tasks
- Offering emotional support
- Attending appointments
- Driving (restrictions apply for up to 8 weeks)



Resources for caregivers:

- <u>CAR T Cell Therapy: A</u> <u>Guide for Adult Patients</u> <u>& Caregivers</u>, Memorial Sloan Kettering Cancer Center
- <u>CAR T Patient &</u> <u>Caregiver Guide</u>, Cancer Support Community

What does CAR T recovery look like?

The first month after getting CAR T is critical for recovery.

- You will stay in the hospital for 1-2 weeks post-infusion to be monitored for side effects
- You must live within 2 hours of the hospital for 4 weeks post-infusion
- You will not be able to drive for at least 8 weeks
- Expect fatigue and reduced appetite
- Prioritize rest and anticipate a gradual return to work and activities

Long-term recovery:

- After the first month, the recovery timeline varies from person to person
- Your treatment team will come up with a personalized plan based on your response to treatment
- You will have follow-up appointments at 1 month, 3 months, and 1 year
- During this time it is important to communicate any side effects or changes in your health to your healthcare team

Clinical trials for CAR T-cell therapies

Clinical trials are exploring CAR T-cell therapies that work differently than Abecma and Carvykti, including therapies that:

- Target a protein on myeloma cells called GPRC5D
- Use T-cells from a donor instead of the patient's own T cells

Moving forward with CAR T-cell therapy

Because CAR T has a few steps, there are other things to consider before moving forward:

- Overall health and organ function
- Age
- Caregiver availability
- Cost

Next steps:

- Ask your doctor or treatment team about CAR T
- Talk to a patient or caregiver who has been through CAR T treatment
- Find a treatment center that is certified to provide CAR T-cell therapy. If CAR T is an option for you, your doctor can refer you for a consultation

CAR T myths

MYTH

Expenses associated with CAR T make this treatment out of reach for many patients.

FACT

There are financial resources available for people having CAR T-cell therapy both in and out of a clinical trial. These include housing and transportation support. Your oncology social worker can help you find out more.

Key takeaways

- You will need a dedicated caregiver 24/7 for at least 4 weeks after your CAR T infusion.
- CAR T is only available at specialized centers so you and your caregiver may need to travel.
- The CAR T process can take several weeks. Your treatment team and your caregiver will help you make a plan that works for you.
- You will need to stay close to your treatment center for at least 4 weeks after your infusion, and you will be monitored closely for side effects.
- There are several costs to consider in addition to the cost of treatment, including transportation, hotels, time away from work, help with household responsibilities.
- Support is available through many different resources. You may need to qualify and/or apply for some services.



The MMRF Myeloma Mentors Program



Myeloma Mentors are trained patient mentors living with myeloma, who share resources and personal experiences to help inform, empower, and support other patients and caregivers.

- The phone-based program connects you one-on-one with a trained mentor
- Patient mentors are living with multiple myeloma in various stages and classifications, and they have undergone a variety of treatments

MMRF Patient Navigation Center





Get support through every step of your multiple myeloma journey.

Give the Patient Navigation Center a call Monday—Friday, 9 AM-7 PM ET

1-888-841-6673 to learn more.



Patient Education Programs 2025

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



Save the Date For Upcoming Patient Education Events

Program	Date and Time
Patient Summit: Irvine, CA	Saturday, May 10
Livestream: Considering CAR-T: What You Need to Know	Wednesday, May 14
Webinar: Understanding Bispecifics	Wednesday, May 28

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



Participate in MMRF's Walk/Run!

Participation is free & open to all ages!

Spring 2025 event registration is NOW OPEN.

Dallas – 5/3 Detroit – 5/17 Tampa – 5/17 Charlotte – 5/31 Chicago – 9/7 Boston – 9/13 National Virtual – 9/20 Twin Cities – 9/20 Washington DC – 9/27 New York City – 10/4 Philadelphia – 10/18 Atlanta – 10/25 Houston – 11/01 Los Angeles – 11/15 Scottsdale – 11/22



Raise awareness.

Fundraise critical funds to accelerate treatments and a cure.

Build community and camaraderie with your local multiple myeloma community.

Visit our website for more information: https://themmrf.org/get-involved

Join Team for Cures

Events-based fundraising in communities nationwide that help to support the mission of the MMRF

With a variety of events available, choose how you'd like to get involved in making an impact.

Our Team for Cures staff looks forward to working alongside you to achieve your goals—while raising critical funds for the MMRF.



Walk/Run



Moving Mountains for Multiple Myeloma



Create Your Own Fundraiser

Half and Full Marathons



Bike/Road to Victories





Adaptive ANGEN Bristol Myers Squibb

Advancing MRD measurement. Empowering patient care.







- Resource tab includes
 - Evaluation Form (your input matters!)
 - Speaker bios
 - Copy of the slide presentation
 - Exhibit Hall



Thank you