Being A Caregiver: CAR T-Cell Therapy

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BEING A CAREGIVER: CAR T-CELL THERAPY
CAR T-CELL

- **CAR T:**
  an abbreviation for Chimeric Antigen Receptor T-cell

- **CAR T-cell therapy:**
  uses the patient’s own immune system to help fight cancer
HOW DOES THIS WORK?

LEUKAPHERESIS
1. Collect white blood cells

MANUFACTURING
2. Isolate and Activate T-cells
3. Engineer T-cells w/ CAR gene

MANUFACTURING
4. Grow & Expand number of CAR T-cells

CELL INFUSION DAY
Infuse CAR T-cells
Consultation and Work-up

Leukapheresis (Cell Collection)

Bridging Therapy

Lymphodepleting Chemotherapy

Cell Infusion

Side-effect Monitoring

Long-term Follow up

CAR T TIMELINE
CONSULTATION & WORK UP
CONSULT DAY
& Work Up

What to expect

• Meet with doctor and staff
• Can be several appointments, departments, people, locations
• Series of tests
• Can be long days
• Completed before cell collection

Caregiver Role

• Drive and accompany patient to appointments
• Make a list of questions before you arrive
• Familiarize yourself with the medical facility location
• Bring water/snacks/cell phone
CELL COLLECTION
(LEUKAPHERESIS)
LEUKAPHERESIS
Cell collection

What to Expect

• Usually takes place in an outpatient setting
• Appointment can take 4-6 hours
• Vein assessment/access
  • Peripheral vs central
• Specialized instrument/machine separates T-cells from blood
• Remaining blood returned to patient
• Can take 3-6 weeks to manufacture cells

Caregiver Role

• Drive patient to appointment
• Attend appointment with patient
• Provide a calming voice/support
• Help with drinks/food
• Bring things to do
• Brink snacks
• Discharge instructions
BRIDGING THERAPY
LYMPHODEPLETING
CHEMOTHERAPY
CHEMOTHERAPY
Outpatient

What to Expect
• Usually done in outpatient treatment center (varies per medical facility)
• Average-3 days of chemotherapy
• Routine blood work
• Nursing assessments/vital signs
• Side effects

Caregiver Role
• Drive patient to appointment
• Attend appointment with patient
• Home chemotherapy precautions
• Infection prevention
• Who and when to call
• Side effect monitoring:
  • Fatigue, nausea, vomiting
Home Chemotherapy Precautions

• Take precautions with all body fluids (vomit, urine, stool) until 5 days after the end of chemotherapy
• Avoid contact with patient’s body fluids by wearing gloves when handling dirty linen or clothing
• If linen or clothing becomes dirty, wash items separately before washing with other laundry
• Wash hands thoroughly with soap and water after providing any care

Infection Prevention

• Avoid crowds and handshaking
• Masks in public places
• Do not allow sick visitors or those exposed to contagious disease
• Keep the home clean
• Follow food safety
• Follow infection prevention guidelines from facility
CELL INFUSION

What to Expect
• Patient will either be in a comfortable bed or chair during infusion
• Therapy is infused by the nurse
• Usually takes around 15-30 minutes to infuse/complete
• Pre-medication/IV fluids may be given
• Nurse monitors for possible reactions
  • Itching, hives, changes in blood pressure, heart rate, temperature

Caregiver Role
• Provide a friendly face/comfort
• Communicate with patient about how they are feeling
• Report any new symptoms to nurse right away
• Wallet Card
SIDE EFFECTS & MONITORING
SIDES EFFECTS
Chemotherapy

What to Expect

• Low red blood cells, white blood cells, & platelets
• Risk for infection
• Risk for bleeding
• Fatigue
• Nausea, Vomiting, Diarrhea

Caregiver Role

• Support/Listener
• Communication
• Monitoring
• Encouragement
# SIDE EFFECTS
CAR T-cell Therapy

<table>
<thead>
<tr>
<th>Cytokine Release Syndrome (CRS)</th>
<th>Neurological Toxicities (ICANS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Irregular or fast heart rate, low blood pressure</td>
<td>• Confusion, hallucinations</td>
</tr>
<tr>
<td>• Fever</td>
<td>• Difficulty walking</td>
</tr>
<tr>
<td>• Shortness of breath, low oxygen levels</td>
<td>• Difficulty speaking, reading, writing, or understanding speech</td>
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<tr>
<td>• Nausea, vomiting</td>
<td>• Extreme sleepiness, dizziness, or tremors</td>
</tr>
<tr>
<td>• Headache, dizziness, confusion</td>
<td>• Facial droop</td>
</tr>
<tr>
<td></td>
<td>• Seizures</td>
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</tbody>
</table>
CRS & NEUROTOXICITY MONITORING

- Monitor vital signs
- Checking pupils
- Hand/foot and arm/leg strength
- Hand coordination
- Questions to look for confusion or difficulty speaking
- Perform simple body movements to look for tremors or difficulty walking
- Write a sentence to check for changes in handwriting
- Possible additional monitoring
CAREGIVER ROLE

- Pay attention to changes in your loved one
- Inform medical team of changes/concerns
- Know who to call and when to call
- Keep yourself healthy
- Know your resources
- Ask for help
LONG TERM FOLLOW UP
## Long Term Follow Up and Support

### Long Term Follow Up
- Remain close to medical center for at least 4 weeks
- Re-admission to hospital may be necessary
- Possible complications
- Line/catheter care
- Patients are not able to drive a car for at least 8 weeks

### Caregiver Role
- Drive and accompany patients to appointments
- Housekeeping, preparing meals, errands, laundry
- Infection prevention
- Medication management
• American Cancer Society
• BMT InfoNet
• CancerCare
• Cancer Support Community
• Family Reach
• International Myeloma Foundation

• Leukemia & Lymphoma Society
• Leukemia Research Foundation
• Lymphoma Research Foundation
• National Cancer Institute
• Patient Empowerment Network

RESOURCES
SUMMARY

As a caregiver, you play a vital role in your loved one’s journey. You are part of the care team, the eyes and ears outside of the hospital. Education is the first step in preparing for this journey.
SELF CARE

- Meditation, Yoga, Music Therapy
- Breathing exercises
- Exercise, well-balanced diet
- Set limits, take breaks, don’t overload to-do list
- Communication
- Find time for joy, things you find meaningful & enjoy
- Ask for Help
Questions?

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Let Us Know How BMT InfoNet Can Help YOU!

Visit our website: bmtinfonet.org

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We're here to help every step of the way!

• National Cancer Institute, T-cell Transfer Therapy (September 24, 2019) [https://www.cancer.gov/about-cancer/treatment/types/immunotherapy/t-cell-transfer-therapy](https://www.cancer.gov/about-cancer/treatment/types/immunotherapy/t-cell-transfer-therapy)
