Educating Multidisciplinary Care Teams, Patients, and Caregivers on CAR T-Cell Therapy

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Abstract

Two anti-CD19 chimeric antigen receptor (CAR) T-cell therapies are approved for adults with relapsed or refractory large B-cell lymphoma after more than two lines of therapy. Although CAR T-cell therapy has demonstrated significant efficacy for some patients, the treatment process can be long and complex and each phase is associated with unique challenges. Care for patients receiving CAR T-cell therapy also involves many health-care players, including physicians, advanced practitioners, nurse coordinators, nurse educators, apheresis nurses, inpatient and outpatient nurses, cellular therapy technologists, case managers, social workers, and many more. Dedicated educational efforts for patients, caregivers, and clinical providers that make up the multidisciplinary care team are warranted for optimal treatment. Here we present an overview of key elements for education along the treatment journey with CAR T-cell therapy, including considerations for each stage of therapy and specific recommendations for care teams, patients, and caregivers. We also present examples of educational programs that have been implemented at our institution.

Two anti-CD19 chimeric antigen receptor (CAR) T-cell therapies (axicabtagene ciloleucel [Yescarta] and tisagenlecleucel [Kymriah]) are approved for adults with relapsed or refractory large B-cell lymphoma after two or more lines of systemic therapy and have demonstrated significant efficacy in some patients (Kite Pharma Inc., 2017; Novartis Pharmaceuticals Corporation, 2018a). There are approximately 58 certified authorized treatment centers in the United States that offer treatment with these therapies. Although CAR T-cell therapy offers the hope of durable remissions in patients whose cancer has proven refractory to standard chemotherapy options, the treatment process can be long and complex, and each phase is associated with unique challenges. Dedicated educational efforts for pa-

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tients, caregivers, and clinical providers that make up the multidisciplinary care team are warranted for optimal treatment.

This article presents an overview of key elements for education along the treatment journey with CAR T-cell therapy, including considerations for each stage of therapy and specific recommendations for care teams, patients, and caregivers. We also present examples of educational programs implemented at our institution.

EDUCATING MULTIDISCIPLINARY CARE TEAMS

Care for patients receiving CAR T-cell therapy is complex and involves many health-care players. The authorized treatment center (ATC) team includes the physician, advanced practitioners (APs), nurse coordinators, nurse educators, apheresis nurses, inpatient and outpatient nurses, cellular therapy technologists, case managers, social workers, and many more. Each player's role is critical to the success of a patient's CAR T-cell therapy. Likewise, all members of the care team play an integral part in providing education to one another, the referring team, and patients and their caregivers.

EDUCATION CONSIDERATIONS ALONG THE CAR T-CELL TREATMENT JOURNEY

The CAR T-cell treatment journey encompasses several phases, including consultation/workup, apheresis, bridging therapy, lymphodepletion, CAR T-cell infusion, toxicity monitoring and treatment, discharge, outpatient follow-up, and transition of care. In the first article of this supplement, Kathleen McDermott, RN, BSN, OCN®, BMTCN®, and Lauren Spendley, AGNP, MSN, AOCN®, discuss each stage of the patient journey (McDermott & Spendley, 2019). Each phase also has unique educational considerations for each audience involved in CAR T-cell treatment (see Tables 1–9 starting on the next page).

Consultation/Workup

Consideration for CAR T-cell therapy begins with a referral from a primary medical oncologist to an ATC. Early referrals for patients with high-risk lymphoma may facilitate early transition to therapy, which could improve outcomes. During this phase, the ATC will need to determine patient eligibility for CAR T-cell therapy. The selection of appropriate patients who have the ability to meet the financial and logistical demands of CAR T-cell therapy is essential for optimal outcomes.

Table 1. Educational Considerations for the Multidisciplinary Care Team and Patients and Caregivers: Consultation and Workup

Multidisciplinary care team (physicians, APs, nurse coordinators, pathologists)

Knowledge

- **APs** should have an understanding of the available CAR T-cell therapies, the similarities and differences between CAR T-cell therapies, and the eligibility criteria for each CAR T-cell therapy
- **Physicians**, **APs**, and **nurse coordinators** will need to gather and review patient information to determine eligibility
  - » Medical history
  - » Most recent diagnostic scans
  - » Performance status
  - » Pathology reports confirming CD19-positive diffuse large B-cell lymphoma (It is recommended that a **pathologist** at the ATC review diagnostic biopsy specimens)
- The **multidisciplinary care team** will need to decide whether to perform a pretreatment biopsy to confirm CD19-positive disease. The pretreatment biopsy specimen may also guide future treatment paradigms by allowing retrospective research into the morphology and cytology of tumors that have the best response to CAR T-cell therapy

Education

- Prior to initial consultation, the **AP** may work with the **referring physician's team** on the requirements to demonstrate candidacy for treatment by reviewing the patient's clinical history, diagnostic scans, and pathology results

Communication

- The **AP**, **treating physician**, and **nurse coordinator** should communicate with the **referring physician** regarding the patient's eligibility for treatment, timeline for therapy, and any plans for chemotherapy prior to CAR T-cell therapy infusion
- Communication with the **referring physician** is essential, because they will continue to be involved throughout the patient's CAR T-cell therapy journey

Patients and caregivers

Knowledge

- **APs** and **nurse coordinators** need to educate the **patient** on the goals, risks, and benefits of CAR T-cell therapy, including treatment eligibility criteria, the course of therapy, the risks and management of toxicities, and remaining in close proximity to the ATC with a dedicated caregiver

Caregiver Selection

- **Patients** will need assistance from the multidisciplinary care team with identifying a caregiver and, ideally, an alternate caregiver
- The **caregiver** should be someone who knows the patient well and is devoted to the patient's well-being. The individual should be a reliable adult in good health who is able to provide hands-on care and is available 24 hours a day
- **Caregivers** should not be hired
- Common **caregiver** responsibilities include:
  - » Communicating with the treatment team during all phases of therapy
  - » Transporting or accompanying patient en route to appointments
  - » Learning and practicing home chemotherapy precautions
  - » Administering oral medications as instructed by the treatment team
  - » Preparing meals and maintaining an aseptic lodging area

Leukapheresis

Once the patient is determined to be eligible and has consented to therapy, the collection procedure will be coordinated with the treatment team, the CAR T-cell therapy manufacturer, the apheresis center, and the cell-processing laboratory.

Table 2. Educational Considerations for the Multidisciplinary Care Team and Patients and Caregivers: Leukapheresis

Multidisciplinary care team (ATC physician, APs, nurse coordinators, apheresis nurses, referring physician)

Knowledge

- The **multidisciplinary care team** should understand the leukapheresis process, including how to carefully review the patient's medication history to identify any risks prior to apheresis (e.g., prescribed antihypertensive treatments that could contribute to hypotension or anticoagulant medications that need to be held before placement of an apheresis catheter; Philip, Sarkar, & Pathak, 2013)

Communication

- Close communication between **APs**, **nurse coordinators**, and the **referring physician** is essential during this phase, because there are specific recommendations for chemotherapy and steroid administration and washout periods (Kite Pharma Inc., 2017; Novartis Pharmaceuticals Corporation, 2018a)
- **ATC physicians**, **APs**, and **nurse coordinators** can all play a role in educating the **referring physician** to ensure that the washout requirements before apheresis are maintained

Patients and caregivers

Knowledge

- Prior to leukapheresis, the patient should meet with an **AP** to discuss the process and the associated risks, including:
  - » Potential placement of a central venous catheter
  - » The most common apheresis-specific reactions, including hypocalcemia (Philip et al., 2013)
  - » Less common/rare apheresis reactions, such as hypotension or air embolism (Philip et al., 2013)
  - » General apheresis patient requirements per the manufacturer's guidelines
  - » Manufacturing times for CAR T-cell therapies (Better, Chiruvolu, & Sabatino, 2018; Majors, Spencer, Ericson, & Romanov, 2018)
  - » Potential for re-apheresis in the case of unsuccessful manufacturing

Caregiver assistance

- **Caregivers** should be present during leukapheresis, because patients are often fatigued and are encouraged not to drive or travel following apheresis (Kite Pharma Inc., 2017; Novartis Pharmaceuticals Corporation, 2018a)

Bridging Therapy

Between leukapheresis and the administration of CAR T-cell therapy, patients need to be monitored closely to manage any symptoms from disease. Although efforts are being made to reduce the turnaround time involved in manufacturing CAR T-cell therapies, bridging therapy is often given to patients in the interim to palliate symptoms, debulk the primary tumor, and preserve functional status (Kite Pharma Inc., 2017; Novartis Pharmaceuticals Corporation, 2018a). Waiting for the CAR T-cell therapy to be manufactured can be difficult, because patients often have highly aggressive disease and can decline to the point where it is no longer safe to administer the manufactured CAR T cells.

Table 3. Educational Considerations for the Multidisciplinary Care Team and Patients and Caregivers: Bridging Therapy

Multidisciplinary care team (ATC physician, APs, nurse coordinators)	Patients and caregivers
Knowledge • **APs** should follow up weekly with patients during this phase and have a keen appreciation for the progression of disease, including monitoring lactate dehydrogenase and C-reactive protein, assessing for palpable lymphadenopathy, and assessing functional status • Bridging therapy is highly individualized to the patient and institution. **APs** and **nurse coordinators** should be aware of possible regimens and their associated toxicities as well as the supportive care management for radiation and immunotherapy • The **multidisciplinary care team** should be knowledgeable about the follow-up recommendations for evaluating blood counts, palpable lymphadenopathy, and infection risk *Communication* • Close communication between the **ATC physician** and the **referring physician** is key, because bridging therapy may be administered at either location	*Knowledge* • **APs** and **nurse coordinators** should reassure **patients** and **caregivers** during this process by providing information on the manufacturing of CAR T cells. Although this time can be difficult, efforts are being made to treat patients with therapy that will control their disease until CAR T-cell therapy infusion is possible

Lymphodepletion

Before being infused with the manufactured CAR T cells, patients receive lymphodepleting chemotherapy to create a favorable environment for the CAR T cells to expand and proliferate (Better et al., 2018; Kochenderfer et al., 2017). Patients usually receive lymphodepleting chemotherapy in the outpatient setting. The dose and schedule can vary among clinical trials and commercial products (Abramson et al., 2018; Kite Pharma Inc., 2017; Novartis Pharmaceuticals Corporation, 2018a). After lymphodepletion is completed, the patient and caregiver will have a couple of days to prepare for the CAR T-cell infusion.

Table 4. Educational Considerations for the Multidisciplinary Care Team and Patients and Caregivers: Lymphodepletion

Multidisciplinary care team (ATC physician, APs, nurses)	Patients and caregivers
Knowledge • **ATC physicians**, **APs**, and **nurses** should be aware of the most common side effects of lymphodepleting chemotherapies, including cytopenias, fatigue, nausea/vomiting, and alopecia (Baxter Healthcare Corporation, 2013; Hallek et al., 2001) • **Nurses** administering the chemotherapy should be knowledgeable about the sequence, duration, administration, and safe-handling considerations of the lymphodepleting chemotherapy regimen	*Knowledge* • **Nurses** and **pharmacists** should educate **patients** and their **caregiver** on » Logistics: location, length of infusions, and necessary safe-handling precautions and time frames for caregivers » Potential side effects: Although patients may experience common side effects (e.g., nausea, vomiting, diarrhea, and pancytopenia), the lymphodepleting regimen contains low doses of chemotherapy and is generally well tolerated » Management of symptoms, including when and how to report them to the clinical team

CAR T-Cell Infusion

The patient is usually admitted to the inpatient unit of the ATC on the day before the CAR T-cell infusion is to be administered; however, specific guidelines can vary across ATCs, clinical trials, and available therapies. The infusion phase can be a stressful and anxious time for the patient and their caregiver. The day of the CAR T-cell infusion is a very important day for the patient and caregiver, and they will likely have many questions about the process, what to expect, and how to prepare.

Table 5. Educational Considerations for the Multidisciplinary Care Team and Patients and Caregivers: CAR T-Cell Infusion

Multidisciplinary care team (ATC physician, APs, nurses, cellular therapy technologists, nurse educators, nurse coordinators)

Preparation for infusion

- **ATC physicians**, **APs**, and **nurses** should be familiar with any required premedication and necessary patient monitoring
- **Nurses** infusing the CAR T-cell therapy should be competent on administration of cellular therapy products and knowledgeable about the frequency of monitoring the patient's vital signs and oxygenation and the signs and symptoms of infusion-related reactions. Telemetry monitoring may also be indicated
- **Nurses** administering CAR T cells should be knowledgeable about the equipment and supplies needed for infusion, including the type of tubing required
- The **nurse** should ensure that emergency equipment is at the bedside and that at least two doses of tocilizumab are available to administer during the recovery period, if needed
- The timing of the infusion should be discussed between the **nurse** and the **cellular therapy technologist** to ensure that the timing of the premedication, thawing of the CAR T-cell product, and start of the infusion is coordinated
- The **nurse** taking care of the patient should have a thorough understanding of CAR T-cell therapy, the infusion process, and the toxicities associated with this therapy so that they can best support the patient and caregiver

Patients and caregivers

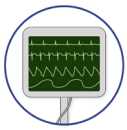
Knowledge

- The **patient** and **caregiver** should receive information on
  - » What to expect during inpatient hospitalization
  - » The items that they may want to bring to the hospital
  - » The CAR T-cell infusion process, including timing of premedication and infusion, potential side effects, symptoms to report, and timing of monitoring
- Education is completed and reinforced by multiple members of the multidisciplinary care team including the **ATC physicians**, **APs**, **nurses**, **nurse educators**, and **nurse coordinators**

Wallet card

- The **nurse** will provide the **patient** with a wallet card that contains information on the CAR T-cell therapy, date of infusion, important contact information, and reasons to seek urgent care. The patient should be instructed to always have the card with him/her and present it to the medical teams in an urgent-care or emergency-room setting in the event of a medical emergency (Kite Pharma Inc., 2018; Novartis Pharmaceuticals Corporation, 2018b)

Toxicity Monitoring and Treatment



The two most prevalent toxicities associated with CAR T-cell therapy are cytokine release syndrome (CRS) and neurologic events, also known as immune effector cell–associated neurotoxicity syndrome (ICANS; Lee et al., 2018; Neelapu et al., 2018). These toxicities can be life-threatening; therefore, prompt recognition and treatment is of the utmost importance. Please refer to the second article of this supplement by Sherry Adkins, RN, MSN, ANP-C, (2019) for an overview of the toxicities associated with CAR T-cell therapy and their management.

Table 6. Educational Considerations for the Multidisciplinary Care Team and Patients and Caregivers: Toxicity Monitoring and Treatment

Multidisciplinary care team (ATC physician, APs, nurses, nurse coordinators, nurse educators, social workers)

Knowledge

- **APs** and **nurses** should have a thorough understanding of how to assess, monitor, and treat patients for CRS, neurologic events, cytopenias, hypogammaglobulinemia, infection, and secondary malignancies
  - » Knowledge of the approximate onset and duration of CRS and neurologic events for each CAR T-cell product—including time frames during which events may occur—is important for appropriate monitoring for these events
  - » Knowledge and understanding of the scales used to grade CRS and neurotoxicity are important in the assessment and treatment of these toxicities (for more information, please refer to the second article in this supplement; Adkins, 2019)
- **APs** and **nurses** must know how to appropriately treat toxicities using both pharmacologic and nonpharmacologic methods

Monitoring

- The **ATC physician**, **APs**, **nurse coordinators**, and **nurses** must monitor the patients daily for at least 7 days and then through 4 weeks after the infusion for signs and symptoms of CRS and neurologic events (Kite Pharma Inc., 2017; Novartis Pharmaceuticals Corporation, 2018a)

Precautions

- **APs** and **nurses** should be ready to implement fall, aspiration, and seizure precautions depending on the toxicities experienced by the patient. The safety of the patient and of the staff and caregivers is of utmost importance when patients experience CRS and neurotoxicity

Patients and caregivers

Knowledge

- The **patient** and their **caregiver** should be educated in-depth about the side effects and toxicities associated with CAR T-cell therapy, including what to watch for, management, when to call the ATC, and when to go to the nearest emergency room. Education is completed and reinforced by all members of the ATC team, including the **AP**, **nurses**, **nurse educators**, and **nurse coordinators**
- The **patient** and their **caregiver** must understand that they need to stay within 2 hours of the ATC for a minimum of 4 weeks after infusion for close follow-up and monitoring for recurrent or late CRS or neurologic events (Kite Pharma Inc., 2017; Novartis Pharmaceuticals Corporation, 2018a)

Caregiver requirements

- **Patients** are required to have a **caregiver** for a minimum of 4 weeks following CAR T-cell therapy infusion and possibly for up to 8 weeks after CAR T-cell infusion. Transportation may be of concern, because patients are not allowed to drive for 8 weeks following CAR T-cell infusion (Kite Pharma Inc., 2017; Novartis Pharmaceuticals Corporation, 2018a)
- **Caregivers** are often the first people to notice subtle changes in a patient's status and should be educated to notify the health-care team if changes are noticed
- **Caregivers** may be anxious, stressed, or feel overwhelmed. It is important to include **social workers** early on in the CAR T-cell therapy process to provide support as needed.

Discharge

Patients may be discharged from inpatient care when all nonhematologic toxicities have improved to at least grade 1 or fully resolved. Hematologic toxicities due to lymphodepleting chemotherapy may continue beyond resolution of CRS and neurologic events and, if manageable in the outpatient setting, should not prohibit discharge.

Table 7. Educational Considerations for the Multidisciplinary Care Team and Patients and Caregivers: Discharge

Multidisciplinary care team (ATC physician, APs, nurses, case managers, social workers)

Knowledge

- The **multidisciplinary care team** should be knowledgeable about discharge requirements. Patients must be discharged with a caregiver and stay within 2 hours of the ATC for a minimum of 4 weeks after infusion for close follow-up and monitoring for recurrent or late CRS or neurologic events (Kite Pharma Inc., 2017; Novartis Pharmaceuticals Corporation, 2018a)

Communication

- Patients occasionally are or become deconditioned as a result of their disease process or prolonged hospitalization and may require admittance to an inpatient rehabilitation center to bridge them until they are discharged home. Other patients may require in-home physical therapy or nursing services. **Case managers** and **social workers** play an integral part in the discharge needs of the patient and caregiver. It is important for the **ATC physician**, **AP**, and/or **nurses** to communicate and educate the health-care providers at the rehabilitation center or home health-care center on the risk of late toxicities and when and how to notify the ATC if they occur

Patients and caregivers

Knowledge

- The signs and symptoms of CRS and neurologic events and the actions to take if these toxicities are suspected should be reinforced with the **patient** and **caregiver**
- **Patients** need to be reminded that they are required to stay close to the location where they receive CAR T-cell therapy for at least 4 weeks after infusion of the product. Per the Risk Evaluation and Mitigation Strategies (REMS) programs of the U.S. Food and Drug Administration–approved CAR T-cell therapies, patients must be lodged within 2 hours of the certified treatment facility; however, many institutions may set stricter proximity guidelines (Kite Pharma Inc., 2017; Novartis Pharmaceuticals Corporation, 2018a)
- **Patients** and **caregivers** should be informed that the CAR T-cell recipient may be hospitalized to monitor for side effects after discharge during the 4 weeks after infusion until side effects are under control and it is safe for them to leave the ATC
- The **patient** and **caregiver** should be instructed that the patient should not drive or operate machinery for 8 weeks after the infusion because of the risk of late-onset neurologic events (Kite Pharma Inc., 2017; Novartis Pharmaceuticals Corporation, 2018a)

Wallet card

- The **patient** must have their completed wallet card with them at discharge

Outpatient Follow-Up

Patients may be discharged to their referring physician after 4 weeks of close monitoring following the infusion if all adverse effects have resolved to a safe level. After the patient has completed CAR T-cell therapy and returns to their local provider, they enter a surveillance phase that involves long-term, potentially lifelong follow-up.

Table 8. Educational Considerations for the Multidisciplinary Care Team and Patients and Caregivers: Outpatient Follow-Up

Multidisciplinary care team (APs, nurse coordinators)	Patients and caregivers
Monitoring • **APs** should schedule follow-up appointments or advise patients to be monitored locally life-long for secondary malignancies. In the event that a secondary malignancy occurs, the CAR T-cell therapy manufacturer should be contacted for guidance and possible sample testing • **APs** and **nurse coordinators** should be educated about the long-term toxicities of CAR T-cell therapy, including prolonged cytopenias that may occur > 1 year after therapy, B-cell aplasia, and recurrent infections	*Toxicities* • **Patients** and **caregivers** should be educated about the increased risk of infection due to prolonged cytopenias and B-cell aplasia. Hygiene and infection-prevention strategies must be stressed. In addition, the **patient** should monitor for any signs of relapse, including fevers, night sweats, and palpable lymphadenopathy

Transition of Care

After CAR T-cell therapy infusion, the ATC will notify the patient's referring physician about his/her CAR T-cell therapy experience and recovery. Patient care is then transitioned from the ATC to the referring physician.

Table 9. Educational Considerations for the Multidisciplinary Care Team and Patients and Caregivers: Transition of Care

Multidisciplinary care team (ATC physician, APs, nurse coordinators, referring physician)	Patients and caregivers
Transferring care • When transferring care, it can be helpful for the **nurse coordinators** and **APs** to provide the following information to the **referring physician** » A copy of the patient wallet card » A copy of the CAR T-cell therapy prescribing information and medication guide » An accurate medication list » Hospital records (e.g., pre–CAR T-cell therapy workup results, notes made during inpatient CAR T-cell therapy, restaging results if performed at days 28–30, notes from the last ambulatory visit, educational handouts on CRS and neurologic events) » Recommendations for which laboratory values should be monitored and the timing of such *Communication* • Ongoing close communication with the **referring physician** is essential for a smooth transition of care • **APs** and **nurse coordinators** should educate the **referring physician's team** about the toxicities associated with CAR T-cell therapy, steroid use, and long-term effects of treatment (i.e., B-cell aplasia and hypogammaglobulinemia) • A point of contact should be provided to the **referring physician** (explain when and how to contact the oncologist who treated the patient with CAR T-cell therapy)	*Knowledge* • The **patient** needs to understand that they will be followed over time by their primary oncologist more often and by the ATC less often

CAR T-CELL THERAPY EDUCATIONAL PROGRAMS: THE EXPERIENCE AT MOFFITT CANCER CENTER

Staff Education

Preparation for the ZUMA-1 Clinical Trial. Prior to patient enrollment in the ZUMA-1 trial, Moffitt Cancer Center prepared for CAR T-cell therapy by identifying and educating the multidisciplinary care team via educational plans, sessions, and handouts. Preparations included:

- Presentations by the clinical trial's Principal Investigator to dedicated blood and marrow transplant (BMT) physicians and BMT APs. The presentations provided a brief overview of immunotherapy and CAR T-cell therapy, the timeline of therapy, and expected side effects and their management.
  - » A small group of experienced BMT inpatient and outpatient nurses, intensive care nurses, and nurse coordinators were selected to attend the presentations
- Ensuring that a dedicated, experienced, and trained nurse is always scheduled to care for the patient on each shift
- One-page education sheets on CAR T-cell therapy, CRS, and tocilizumab (Actemra) were created as quick references for the nurses. Additional references on neurologic/mental status assessments and documentation were also created

Current Educational Program at Moffitt Cancer Center. As the number of patients receiving CAR T-cell therapy increased, the educational program was expanded. The expanded program is currently in use at Moffitt Cancer Center.

- All inpatient and outpatient nurses and nurse coordinators receive CAR T-cell therapy education as part of the unit-based orientation
- Additional live presentations have been provided to staff and are recorded for future viewing on an internal video platform
- Clinical providers are assigned a sufficient number of patients to gain confidence and clinical experience caring for patients receiving CAR T-cell therapy
- CRS and neurologic assessment and management references are updated as new guidelines are developed

Patient and Caregiver Education

Preparation for the ZUMA-1 Clinical Trial. Prior to embarking on CAR T-cell therapy, the multidisciplinary care team helped educate patients and their caregivers about key topics in many formats. The strategies used included:

- A folder created by nurse coordinators that contained information on all phases of the CAR T-cell therapy process
  - » What CAR T-cell therapy is and how it works
  - » A description of neurotoxicity, including signs, symptoms, monitoring, and treatment
  - » A description of CRS, including symptoms and treatment
  - » A flowchart of the steps involved in CAR T-cell therapy, including notes about what the patient will experience at Moffitt Cancer Center during each step
  - » A personalized treatment calendar (to be provided after notification of product readiness)
  - » Education on outpatient/home chemotherapy precautions, inpatient experience, and post-discharge monitoring

Current Educational Program at Moffitt Cancer Center. Patient and caregiver education now includes:

- A folder created by nurse coordinators, as described above, provided to patients at consult
- A 2-hour class that patients receiving CAR T-cell therapy and their caregivers attend prior to admission, which covers the following topics:
  - » Overview of CAR T-cell therapy
  - » What to expect as an inpatient
  - » Information about CRS, neurotoxicity, and other side effects
  - » Discharge information
  - » Roles and responsibilities of the caregiver
  - » When to call the ATC
  - » House cleaning techniques
  - » Safe food handling
  - » Medication management
- Specialized discharge information is provided during the class and is reviewed by the

patient and caregiver nurse educators during one-on-one follow-up sessions:

- » Sexual activity guidelines
- » Respiratory viral infection prevention
- » Personal hygiene
- » Maintaining a clean environment

CONCLUSION

CAR T-cell therapy is a revolutionary and exciting new tool in the treatment of relapsed or refractory large B-cell lymphoma. Efforts to improve the safety, tolerance, and efficacy of this therapy are ongoing with the promise to bring this treatment to more patients who need it. To provide optimal care to patients undertaking this complex patient journey, close collaboration is required between many entities, including the patient and their primary oncologist, the cell therapy laboratory, and the treating facilities' outpatient, inpatient, and consulting teams. Dedicated efforts to educate all key players will contribute to an optimal treatment course.

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