NCCN GUIDELINES FOR PATIENTS®

2020

NCCN QUICK GUIDE™

Immunotherapy Side Effects
CAR T-Cell Therapy

This NCCN QUICK GUIDE™ sheet summarizes key points from the complete NCCN Guidelines for Patients® Immunotherapy Side Effects - CAR T-Cell Therapy. These guidelines explain which tests and treatments are recommended by experts in cancer. To view and download the guidelines, visit NCCN.org/patients or, to order printed copies, visit Amazon.com

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What is CAR T-cell therapy?

■ CAR T-cell therapy is a newer form of cancer immunotherapy. Immunotherapy harnesses the power of the immune system to kill cancer cells. ■ Immune cells are “armed” with a special receptor (chimeric antigen receptor) in a laboratory and put back into the body. The re-engineered immune cells find and kill cancer cells using a “search and destroy” approach. ■ CAR T-cell therapy is given as a one-time infusion in the hospital. Most people stay in the hospital for at least a week following CAR T. This allows for monitoring and treatment of urgent side effects. ■ If hospital (inpatient) care is not possible, close monitoring by a center with CAR T outpatient experience may be an option. ■ CAR T-cell therapy is an aggressive cancer treatment. Severe and potentially life-threatening effects are possible, including cytokine release syndrome (CRS) and neurologic (brain and nervous system-related) problems.	7

What are the currently available CAR T-cell therapies?

■ Axicabtagene ciloleucel (Yescarta®) and tisagenlecleucel (Kymriah®) are currently approved by the U.S. Food & Drug Administration (FDA) for CAR T-cell therapy. ■ Both are approved to treat several forms of B-cell non-Hodgkin lymphoma (NHL). Kymriah® is also approved to treat B-cell acute lymphoblastic leukemia (ALL). ■ Yescarta® and Kymriah® are usually only used to treat cancer that does not respond to other treatment, or that has returned after treatment.	7

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What is cytokine release syndrome (CRS)?

■ CRS is the release of inflammation-causing proteins into the bloodstream by immune cells affected by CAR T-cell therapy. ■ Signs and symptoms include fever, chills, low blood pressure, rapid heartbeat, trouble breathing, and low oxygen. ■ CRS is the most common serious side effect of CAR T-cell therapy. While most patients experience only mild symptoms, serious and life-threatening complications are possible. ■ Tocilizumab (Actemra®) and corticosteroids are used to treat moderate and severe CRS. ■ Tocilizumab is given intravenously for the treatment of CRS. If there is no improvement after your first dose, up to three more doses may be given.	11

What are the nervous system effects of CAR T-cell therapy?

■ The neurologic (nervous system-related) side effects of CAR T-cell therapy are called neurologic or “neuro” toxicities. ■ Mild symptoms include headache, dizziness, trouble sleeping, shaking, confusion, memory issues, speech difficulties, and anxiety. In more severe cases, seizures, brain swelling, and coma can occur and may be life-threatening. ■ Many of the neurotoxicities are collectively known as immune effector cell-associated neurotoxicity syndrome (ICANS). ■ Neurologic side effects typically start 4 to 10 days after treatment and last about 2 weeks, though they can last as long as 4 to 8 weeks. ■ Intravenous corticosteroids are used to treat moderate and severe neurotoxicity.	16

What else should I know about CAR T-cell therapy?

■ Low blood cell counts are common after CAR T-cell therapy. Blood transfusions and growth factors may be used to help prevent infection. ■ Having low numbers of B cells (B-cell aplasia) is a normal, long-term side effect of CAR T-cell therapy. ■ Immunoglobulin replacement therapy may be used to strengthen your immune system and fight infection after CAR T-cell therapy.	9