

CELLULAR THERAPY

SIDE EFFECTS OF CAR T THERAPY

Immunotherapy works by increasing your immune system's ability to kill cancer cells. When the activity of T cells and other immune cells is increased, side effects can occur. Some risks that may go along with chimeric antigen receptor (CAR) T therapy are serious, so after the CAR T infusion you will need to be admitted to the hospital or to a clinic staffed by people who are specially trained to look out for symptoms. Side effects can occur *early* (from the day of the CAR T infusion to 4 weeks afterward) and *late* (4 weeks or more after the infusion). **Table 1** lists the most common side effects of CAR T therapy. **Figure 1** shows a timeline of when they may occur.

Management of Side Effects

The side effects of CAR T therapy are most often temporary. Medications that slow down the immune system can lessen the side effects.

If you are having a side effect from CAR T therapy, it is *very important* for you to tell your healthcare team about your symptoms. Your healthcare team can check your symptoms, your blood pressure, and your temperature. They can also order blood tests and decide whether additional medications are needed. You may need to be admitted to the hospital so that serious side effects can be managed.

If you have a side effect, you may be treated with one of these medications:

- tocilizumab or a similar medication, given through a vein
- a corticosteroid like dexamethasone or methylprednisolone, given by mouth or through a vein

Self-Care

It is very important to take care of yourself while you are receiving CAR T therapy. Here are some important ways to do that:

- Eat a healthy, well-balanced diet.
- Exercise, even if you feel tired.
- Discuss good mouth care with your healthcare team to help reduce infections and mouth sores.
- Check with your healthcare provider before you take any over-the-counter medications.
- Wear a mask in public until your healthcare team tells you it is no longer needed.
- Avoid being around people who may be sick.
- Drink plenty of water each day.
- Identify a caregiver who can take you to and from your daily appointments, help you manage your medications, keep family members and friends up-to-date on your condition, and help you watch for side effects. It is recommended that you have a caregiver for at least the first 2 to 4 weeks after CAR T therapy. Your caregiver should also be able to give you emotional support during CAR T therapy.
- Report any side effects (large or small) to your healthcare team. They will give you a phone number to call if you have any questions or notice any new symptoms.

Table 1. Possible Side Effects of CAR T Therapy

	Side effect	What does the side effect feel like, or what will my laboratory values show?	When does the side effect happen, and how long may it last?
Early	Cytokine release syndrome (CRS)	<p>May be mild or severe</p> <ul style="list-style-type: none"> • Difficulty breathing • Fever (100.4 °F or higher) • Chills • Nausea or vomiting • Diarrhea • Severe muscle or joint pain • Dizziness • Low blood pressure <p>Contact your healthcare provider if you have any of these symptoms.</p>	<ul style="list-style-type: none"> • Usually occurs within 2 or 3 days of CAR T therapy • Can last 7–8 days
	Neurologic toxicities (effects on the brain, spinal cord, and nerves)	<ul style="list-style-type: none"> • Confusion • Agitation • Headache • Shaking • Not feeling like yourself • Loss of balance • Difficulty speaking • Passing out • Seizures <p>Contact your healthcare provider if you have any of these symptoms.</p>	<ul style="list-style-type: none"> • Usually occurs at the same time as CRS symptoms or within 4–10 days after CAR T therapy • Can last up to 17 days
	Change in the ability to drive or use machines	<ul style="list-style-type: none"> • Difficulty remembering things • Uncoordinated movements • Confusion • Weakness • Dizziness • Seizures <p>Do not drive or use heavy machinery.</p>	<ul style="list-style-type: none"> • May occur up to 8 weeks after CAR T therapy; do not drive during this period. • Can last up to 17 days or as long as you are taking supportive medications that cause sleepiness
Late	Low blood cell counts	<ul style="list-style-type: none"> • Lower number of white blood cells (infection-fighting cells) • Lower number of red blood cells (the cells that carry oxygen to other cells in the body) • Lower number of platelets (the cells that cause clotting during bleeding) 	<ul style="list-style-type: none"> • Can occur at any time during or after CAR T therapy • May last weeks to months after CAR T therapy
	Low B cell count (also called B cell aplasia)	<ul style="list-style-type: none"> • Low immunoglobulins 	<ul style="list-style-type: none"> • Usually occurs 4 weeks or more after CAR T therapy • May last weeks to months after CAR T therapy
	Serious infections	<ul style="list-style-type: none"> • Lower numbers of white blood cells 	<ul style="list-style-type: none"> • Can occur at any time during CAR T therapy • May last weeks to months after CAR T therapy

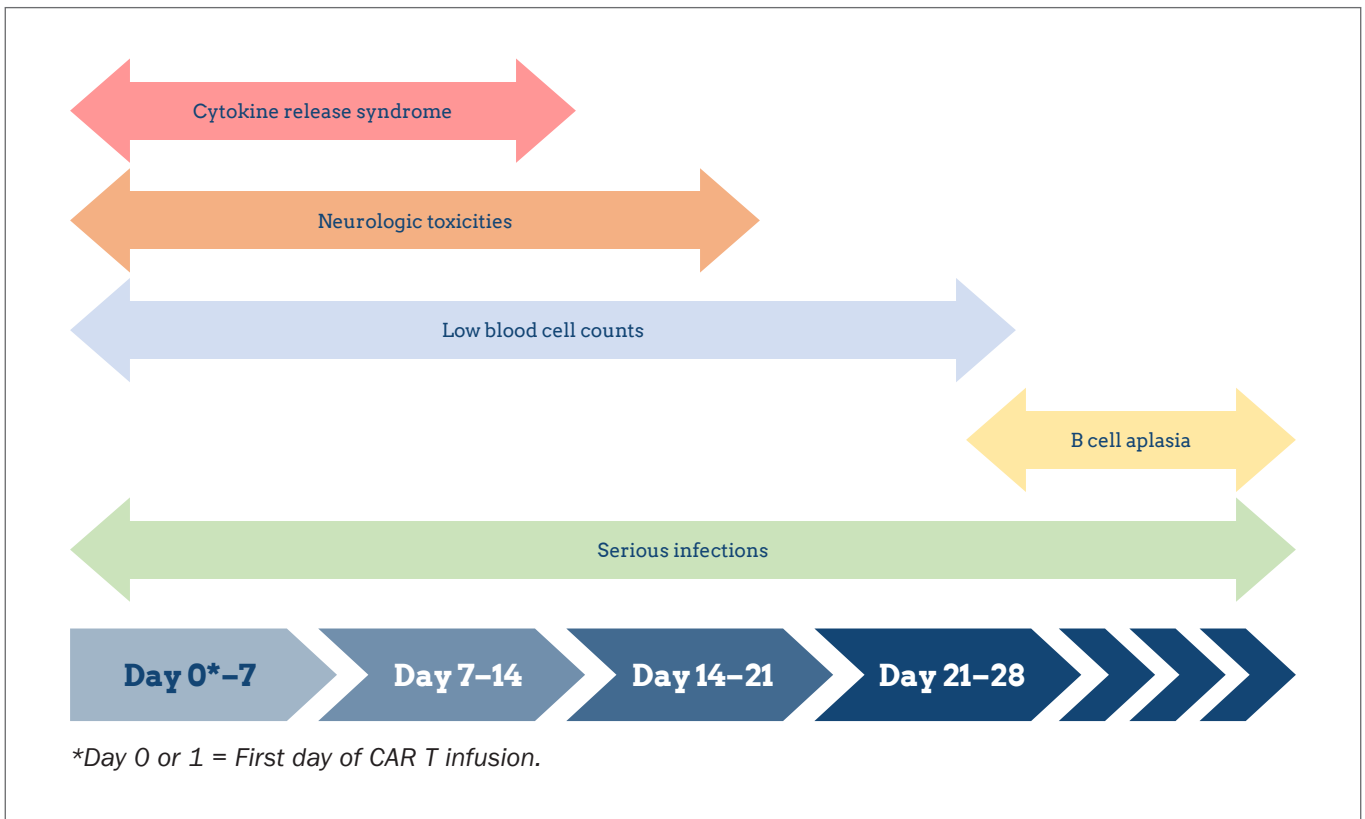


Figure 1. Timeline for Side Effects of CAR T Therapy