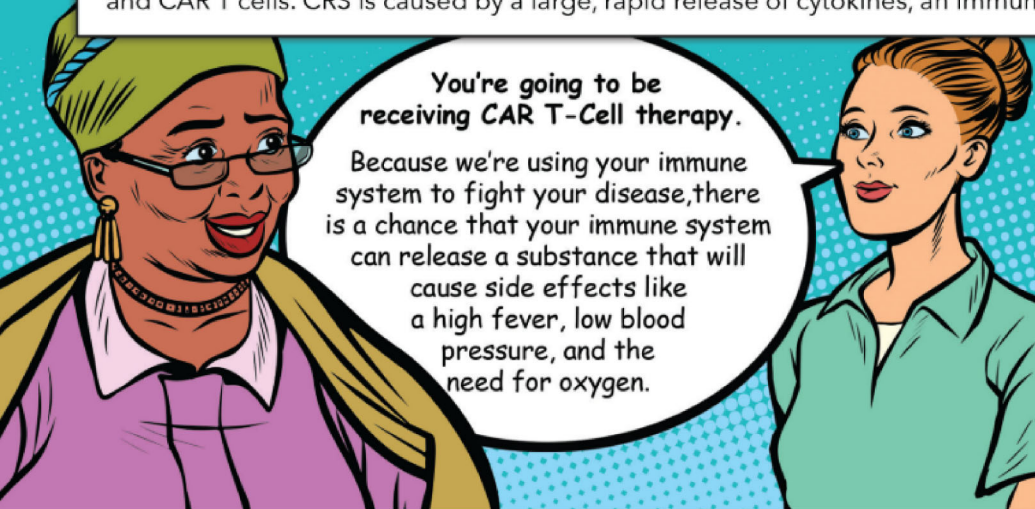


Follow this nurse and her patient as they start therapy and the nurse later assesses symptoms that may point to CRS.

Cytokine Release Syndrome (CRS) is a condition that may occur after treatment with some types of immunotherapy, such as monoclonal antibodies and CAR T cells. CRS is caused by a large, rapid release of cytokines, an immune substance, into the bloodstream from immune cells affected by immunotherapy.



IMMUNOTHERAPY WALLET CARD

NAME: _____

CANCER DX: _____

I/O AGENTS RCVD: CHECKPOINT INHIBITOR(S)
 CAR-T VACCINES ONCOLYTIC VIRAL THERAPY
 MONOCLONAL ANTIBODIES

DRUG NAME(S): _____

IMMUNOTHERAPY TX START DATE: _____

OTHER CANCER MEDICATIONS: _____

NOTE: IMMUNOTHERAPY AGENTS ARE NOT CHEMOTHERAPY AND SIDE EFFECTS MUST BE MANAGED DIFFERENTLY (SEE BACK)

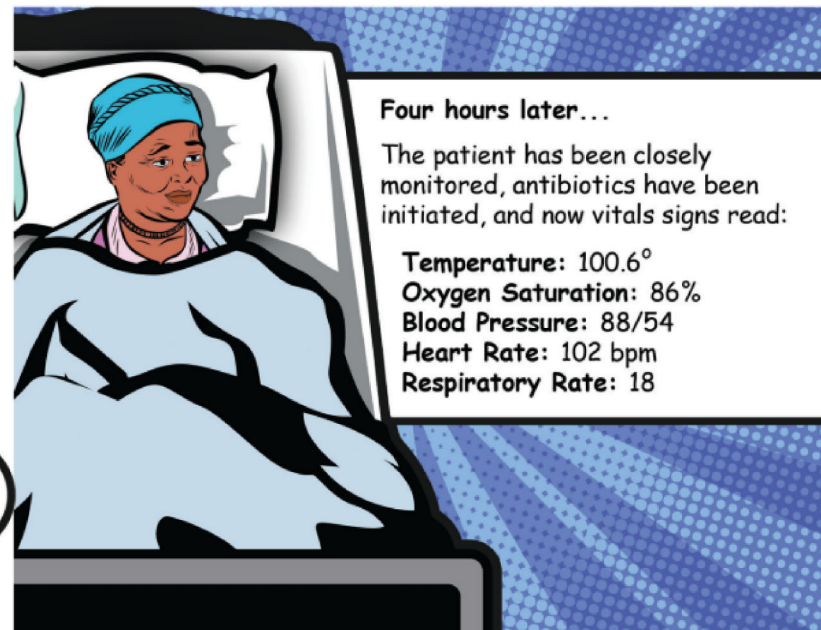
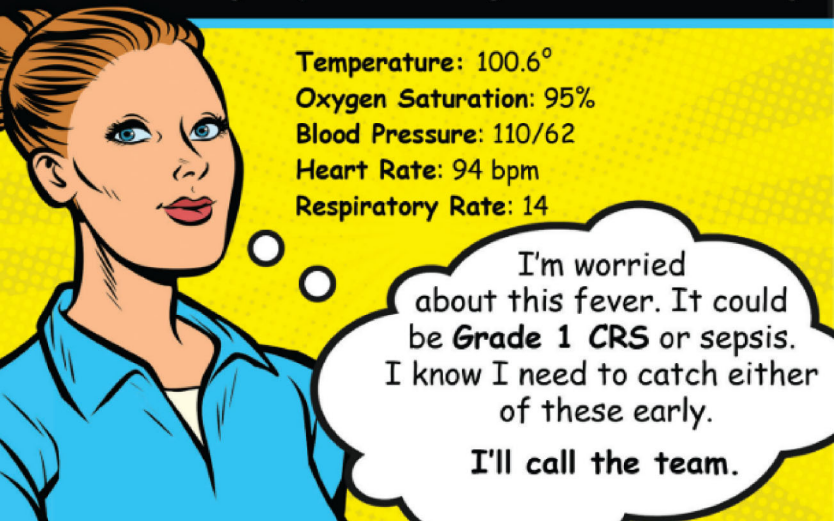
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Oncology Nursing Society

Use this wallet card!

If you ever need to seek treatment, make sure you tell them that you have received immunotherapy because some medications could make the therapy ineffective.

Find the IO Wallet Cards at <https://ons.website/IO-Wallet-Cards>.

Two days after administration of CAR T-Cell therapy, the nurse is taking the patient's vital signs and sees the following:



Based on symptoms, the patient has signs of **Grade 2 CRS**.

Early interventions could include:

- antipyretics,
- low-flow oxygen therapy,
- anticytokine therapy, or
- corticosteroids.

Catch the signs early and use prompt interventions to prevent progression of CRS!

Cytokine Release Syndrome (CRS): Recognize Symptoms Early

- **Typical onset:** 2-3 days
- **Typical duration:** 7-8 days
- **Manifestation may include:** fever, hypotension, tachycardia, hypoxia, and chills. CRS may be associated with cardiac, hepatic, and/or renal dysfunction.
- **Serious events may include:** atrial fibrillation and ventricular tachycardia, cardiac arrest, cardiac failure, renal insufficiency, capillary leak syndrome, hypotension, hypoxia, and hemophagocytic lymphohistiocytosis/macrophage activation syndrome (HLH/MAS).

The common symptoms of CRS are not unique to CRS.

Infections have been reported concurrent with, and even mistaken for, CRS. CRS may have a delayed onset, but it is rarely present beyond 14 days after initiation of therapy.

Remember to be vigilant: evaluate and **document** your interventions.

Early Interventions		Critical Interventions	
<ul style="list-style-type: none"> • Determined based on the symptoms. • Could include: <ul style="list-style-type: none"> • ruling out sepsis if the patient is neutropenic, • antipyretics, • low-flow oxygen therapy, • symptomatic treatment of organ toxicities, or • anticytokine therapy. 		<ul style="list-style-type: none"> • May include: <ul style="list-style-type: none"> • high-flow oxygen therapy, • vasopressors, • corticosteroids, • ICU care, • hemodynamic monitoring, or • mechanical ventilation. 	
Grade 1 Fever with or without constitutional symptoms	Grade 2 Hypotension responding to fluids; hypoxia responding to <40% O ₂	Grade 3 Hypotension managed with one pressor; hypoxia requiring ≥ 40% O ₂	Grade 4 Life-threatening consequences; requiring ventilator support or vasopressor-refractory shock

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(NCCN, 2018)



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