Leukaemia Foundation Factsheet

CAR T-cell therapy

What is CAR T-cell therapy?

- CAR T-cell (chimeric antigen receptor) therapy is an immunotherapy that uses your own immune cells (T cells) to first identify and then attack cancer cells
- T-cells are collected and sent to a laboratory where synthetically engineered receptors are attached to the T-cells
- These modified T-cells are 'grown' in the laboratory and then given back to you to kill the cancer cells

What blood cancers are CAR T-cell therapy used for in australia?

- Paediatric and young adult patients (up to 25 years) B-cell acute lymphoblastic leukaemia (ALL)
- Adult diffuse large B-cell lymphoma (DLBCL)
- Transformed follicular lymphoma
- Primary mediastinal B-cell lymphoma

there are clinical trials currently underway across Australia for other blood cancers

Side effects of CAR T-cell therapy

- Fevers/chills
- Rapid heart rate
- Low blood pressure
- Fatigue
- Nausea/vomiting/diarrhoea
- Cough
- Cytokine Release Syndrome (*see reverse*)

The process

1. Your treatment team recommend CAR T-cell therapy as a treatment option for you and arrange for the collection of your T-cells
2. Your blood is collected at a hospital apheresis unit where the T-cells are separated out and sent to the laboratory.
3. In the laboratory, your T-cells are modified and engineered to find and kill the cancer cells, multiplied and then frozen.
4. You receive chemotherapy to reduce the number of normal T-cells to make room for the CAR T-cells
5. The frozen CAR T-cells are reinfused into you where they multiply in number and 'attack' the cancer cells.
6. You are monitored closely both in hospital and when you are discharged. Recovery time is approximately 2-3 months.
7. You will need to stay close to the hospital for 30 days after the infusion for regular follow up with the treatment team.

Helpful Resources

Leukaemia Foundation's website

YouTube have a video explanation

Peter MacCallum Cancer Centre information

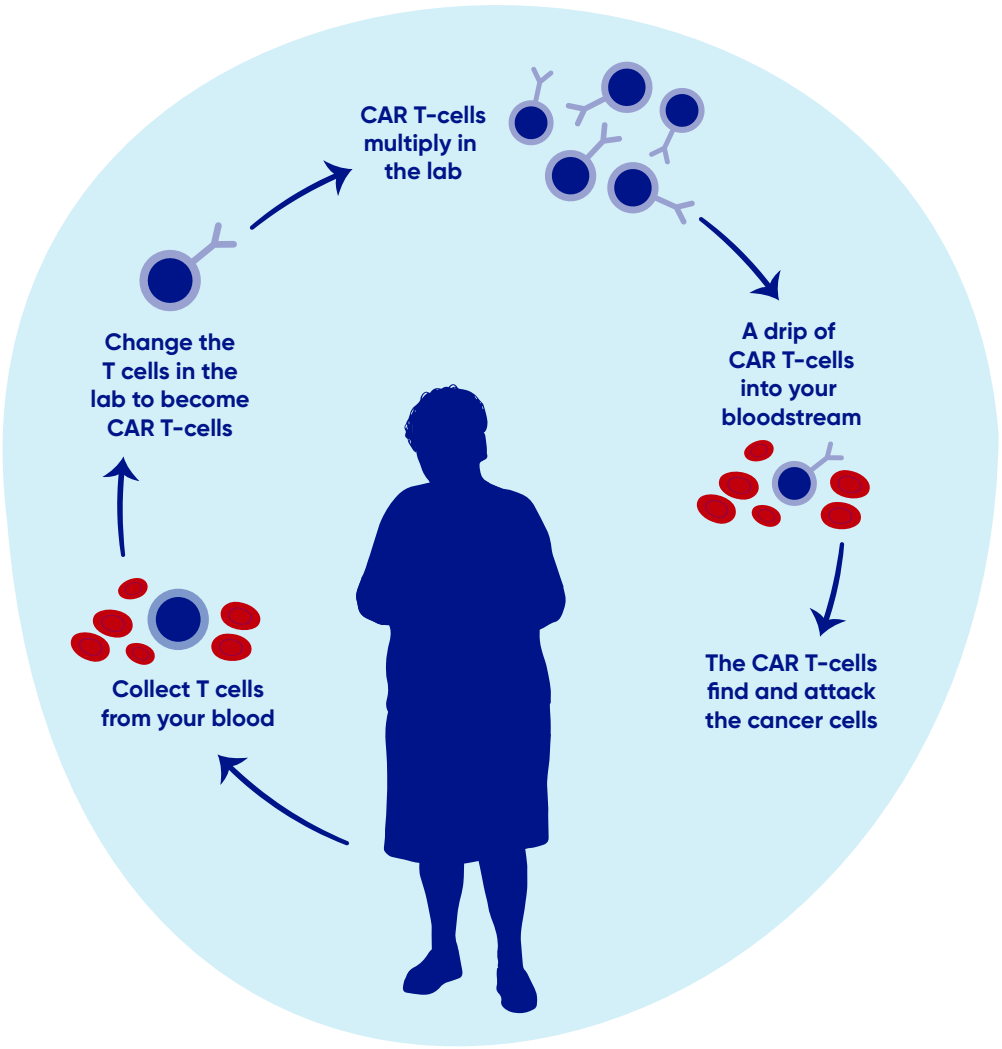
Cytokine Release Syndrome

Cytokine Release Syndrome is a potentially serious side effect frequently associated with CAR T-cell therapy.

Chemical messengers called cytokines are produced when the CAR T-cells multiply and kill the cancer cells.

The activated immune system causes a collection of mild to severe symptoms collectively known as CRS.

CRS usually occurs between 1 and 14 days after the CAR T-cell infusion and requires prompt treatment. It is important that you notify your treatment team if you develop these symptoms.



Mild symptoms can be:

- Fever
- Fatigue
- Headache
- Chills
- Shortness of breath

Severe symptoms can be:

- Cardiac arrhythmias/failure

Need to talk? Our Blood Cancer Support Coordinators are available on 1800 620 420 or find out how we can help at leukaemia.org.au

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