CAR-T guide for healthcare professionals

Patient Identification

Consider the suitability criteria of patients on the next page and speak with the MyTCellTreatment Care Team to help identify appropriate patients with r/r disease for CAR-T therapy.

Collection

- Leukapheresis, when a patient's own T cells are collected from their blood, occurs over 3 to 6 hours. Within 24 hours, the leukapheresis material is cryopreserved.[1]
- Cryopreservation allows for convenient scheduling of leukapheresis at a time that is in the best interest of the patient.[2]

Manufacturing

The patient's cryopreserved cells are shipped via specialized courier to the manufacturing site, where the patients' cells are genetically reprogrammed into CAR-T cells.

Lymphodepleting Chemotherapy

Over 4 days, the patient will receive low-dose lymphodepleting chemotherapy. This prepares the body for the incoming CAR-T cells and may help promote their proliferation.[1,3]

Infusion

CAR-T therapy can be administered in either an inpatient or hospital outpatient setting at the treating physician's discretion.

Short-term Monitoring

The patient should stay within proximity of their Treatment Center for at least 4 weeks after the infusion to monitor for, and treat, potential side effects.[1]

Long-term Monitoring

Routine long-term monitoring is recommended. Patients should be informed about, and encouraged to participate in their CAR-T therapy registry.

References:

1. Kymriah Singapore Package Insert July 2019.
2. Tyagarajan S, Schmitt D, Acker C, Rutjens E. Autologous cryopreserved leukapheresis cellular material for chimeric antigen receptor-T cell manufacture. Cytotherapy. 2019 Dec;21(12):1198-1205. doi: 10.1016/j.jcyt.2019.10.005. PMID: 31837735.
3. Klebanoff CA, Khong HT, Antony PA, Palmer DC, Restifo NP. Sinks, suppressors and antigen presenters: how lymphodepletion enhances T cell-mediated tumor immunotherapy. Trends Immunol. 2005;26(2):111-117.

Collaboration between primary hematologist/oncologist and the Treatment Center

CAR-T Treatment Center

Manufacturing Site

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CAR-T cell referral: Considerations when referring a patient

There are a number of considerations that referring physicians should take into account:

1. When to refer a patient for CAR-T?

The time period from confirmation of CAR-T eligibility / obtaining the patient's apheresis material to the point of infusion with current products can be between 5-8 weeks on average. Patients with complicated bulky disease or rapidly progressive disease may not be able to wait or remain without therapy. Bridging treatments may have to be considered, allowing a period of washout prior to infusion, if needed.

CAR-T is currently approved for patients who have received 2 lines of therapy. Thus, timely patient identification and referrals of eligible CAR-T patients are recommended to avoid administering additional treatments that may impact the patient's T cell health and the overall CAR-T outcome.

2. Patient fitness

The treatment requires adequate performance status and fulfillment of certain patient eligibility and fitness criteria, as defined by the local label and the CAR-T treatment center.

3. Organ function

Patients must have adequate physiological reserve to be able to tolerate CAR-T toxicities including CRS and immune cell associated neurotoxicity syndrome (ICANS). Refer to eligibility below.

4. Timing and type of salvage therapy

This will affect timing of apheresis due to washout periods[4] , which may influence patient fitness for CAR T cell therapy and may affect expression of the target antigen. If the patient is eligible for CAR-T cells, it would be advisable to contact the CAR-T team prior to administration of the next cycle of therapy. A 'backup' apheresis, where suitable, may be considered.

References:
4. Yakoub-Agha I, et al. Haematologica. 2020;105(2):297-316

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What to include in patient referral report?

In order to reduce delays, in addition to the history, treatment history and lab results, it would be helpful for referring physicians to provide in the report the following if it is already available:

- Pathology reports and flow cytometry reports (especially for B-ALL confirming CD19+ relapse)
- Serology for hepatitis B,C; HIV
- Echo report
- Pulmonary function report if available
- Last imaging reports (CT, PET, MRI)
- CNS status or last CS F result

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