

New CAR T therapy approved

YESCARTA (axicabtagene ciloleucel)

Cancer therapy has become increasingly more focused on immunotherapy. The newest form of immunotherapy is known as CAR T, or chimeric antigen receptor T-cell, therapy. The “CAR” portion of the therapy contains an extracellular antigen-binding domain, an extracellular spacer transmembrane domain, and an intracellular signaling domain responsible for T-cell activation. The CAR is a synthetic receptor that can be expressed in T cells to redirect T-cell responses toward specific targets of interest. The CAR is attached to the T cells of the individual patient to form the final product of CAR T therapy. CAR T therapy is being used most effectively in hematological cancers. (1)

If a hospital wants to administer CAR T therapy they must first become an authorized treatment center through the manufacturer (Kite Pharma, Inc.). Prior to administering it to the patient, there are a few more steps involved compared to standard chemotherapy or other types of immunotherapy. The patient must undergo leukaphoresis to extract their T cells for CAR T therapy preparation. The T cells are sent to the YESCARTA manufacturing center where they are prepared as CAR T therapy and sent back to the hospital for administration.(2)

YESCARTA (axicabtagene ciloleucel) is a CD19-directed genetically modified autologous T cell CAR T immunotherapy indicated for use in adults with relapsed/refractory large B-cell lymphoma after two or more lines of systemic therapy. Large B-cell lymphoma includes: diffuse large B-cell lymphoma not otherwise specified, primary mediastinal large B-cell lymphoma, high grade B-cell lymphoma, and diffuse large B-cell lymphoma arising from follicular lymphoma. Patients receiving YESCARTA CAR T therapy will also receive three days of chemotherapy prior to administration of YESCARTA in order to achieve lymphodepletion. YESCARTA does have a black box warning for cytokine release syndrome and neurologic toxicities and is available only through a REMS program. (3)

West Virginia currently does not have an authorized treatment centers for YESCARTA but there are a few authorized centers nearby. The University of Maryland: Marlene and Stewart Greenebaum Comprehensive Cancer Center, UPMC Hillman Cancer Center and The Cleveland Clinic Cancer Center are all authorized centers providing YESCARTA.(2) YESCARTA is a therapy to keep in mind for adult patients with relapsed/refractory large B-cell lymphomas after two or more lines of systemic therapy.

References

1. Chang ZL, Chen YY. CARs: Synthetic Immunoreceptors for Cancer Therapy and Beyond. Trends in Molecular Medicine. Volume 23;(5). Philadelphia, PA: Elsevier; 2017. p. 430-450.
2. YESCARTA staff. Treatment support for YESCARTA. Kite: A Gilead Company. Available at: <https://www.yescarta.com/treatment-support/>. Accessed March 2, 2018.
3. YESCARTA [package insert]. El Segundo, CA: Kite Pharma, Inc.; 2017.