New two-year data show 39 percent of NHL patients treated with CAR T remain in remission

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A new article published today in *The Lancet Oncology* shows 39 percent of large B cell lymphoma patients treated with the chimeric antigen receptor T-cell therapy (CAR T) Yescarta (axicabtagene ciloleucel) remained in remission more than two years (27.1 months median follow up) following therapy, and more than half of the patients treated remain alive. The new long-term safety and activity results of the ZUMA-1 clinical trial were also presented Sunday, Dec. 2 at the American Society of Hematology Annual Meeting in San Diego.

"This therapy has been a game-changer for patients with large B cell lymphoma who have failed two or more lines of therapy. Our ZUMA-1 clinical trial data show durable response beyond 2 years for nearly 40 percent of patients who had almost no chance for complete responses with conventional chemotherapy," said Frederick Locke, M.D., lead author of the article and associate member and vice chair of the Blood and Marrow Transplant and Cellular Immunotherapy Department, and co-leader of the Immunology Program at Moffitt Cancer Center. "Importantly, ongoing remission 2 years after initial chemotherapy for large B cell lymphoma is predictive of a cure, giving us hope that lymphoma will never return for many of the patients remaining in remission 2 years after axicabtagene ciloleucel."

"Large B cell lymphoma is an aggressive, fast-growing disease. Patients can be treated with chemotherapy or if they are well enough, a stem cell

transplant. However, there are not many treatment options for patients when they refractory disease. For those patients, CAR T has proven to be a option that can provide durable remission," said Julio Chavez, M.D., assistant member of the Malignant Hematology Department at Moffitt and co-author of the study.

Moffitt co-led the national, multi-center ZUMA-1 trial, serving as the first cancer center to treat patients with axicabtagene ciloleucel in the investigational setting. Patients enrolled in the study, 108 in total, had large B cell lymphoma or its variants and not responded to their prior chemotherapy or were relapsed within 1 year of a stem cell transplant. The results of the ZUMA-1 trial supported FDA approval of the therapy in October 2017. Following approval, Moffitt was the first center to treat patients with standard of care axicabtagene ciloleucel.

CAR T is a personalized therapy using a patient's own immune cells, or T cells, to fight cancer. For this treatment, a patient's T cells are removed and engineered with additional receptors to help identify, attack and ultimately destroy the cancer cells. The re-engineered T cells are then infused back into the patient's body in a single treatment, enabling the body's immune system to better combat the disease.

More information: Frederick L Locke et al, Long-term safety and activity of axicabtagene ciloleucel in refractory large B-cell lymphoma (ZUMA-1): a single-arm, multicentre, phase 1–2 trial, *The Lancet Oncology* (2018). DOI: 10.1016/S1470-2045(18)30864-7

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