Testing Drug Treatments After CAR T-cell Therapy in Patients With Relapsed/Refractory Diffuse Large B-cell Lymphoma

Status: RECRUITING

Eligibility Criteria

Age: 18 years and over

This study is NOT accepting healthy

Healthy Volunteers: volunteers

Inclusion Criteria:

* STEP 1: REGISTRATION: Participants must have a histologically confirmed diagnosis of diffuse large B-cell lymphoma or follicular lymphoma grade 3b or primary mediastinal large B-cell lymphoma (PMBCL) * STEP 1: REGISTRATION: Participants with transformed DLBCL must have transformed DLBCL from follicular or marginal zone lymphoma * STEP 1: REGISTRATION: Participant must have bi-dimensionally measurable systemic disease (at least one lesion with longest diameter \> 1.5 cm) * STEP 1: REGISTRATION: Participants with secondary central nervous system (CNS) lymphoma (parenchymal, spinal cord, meningeal, cerebrospinal fluid involvement) must be asymptomatic from their CNS disease * STEP 1: REGISTRATION: Participants must be registered for step 1 after they have signed institutional consent for CAR T-cell leukapheresis but prior to the start of lymphodepleting (LD) chemotherapy for commercial CAR T-cell product * STEP 1: REGISTRATION: In the opinion of the enrolling physician, participants must be felt to be a candidate for CAR T-cell therapy with plans to be treated with Food and Drug Administration (FDA) approved commercially available CD19 CAR T-cell construct. * Participants must qualify for commercially approved CD19 CAR T-cell therapy per FDA package insert. * If the CAR T-cell product does not meet parameters to be given as an FDA approved product (i.e. does not meet specification criteria mandated by FDA and is infused under an expanded access protocol \[EAP\] or single participant investigational new drug \[IND\]) the participant will be taken off of study and no longer be eligible for step 2 randomization * STEP 1: REGISTRATION: Participants are permitted to receive or have received 'bridging therapy' after CAR T-cell leukapheresis. However, participants must not receive polatuzumab vedotin, and/or mosunetuzumab as part of bridging therapy. * Bridging therapy is defined as lymphoma directed therapy administered between leukapheresis and the start of LD chemotherapy. This includes cytotoxic chemotherapy (e.g.: bendamustine and rituximab \[BR\], rituximab, gemcitabine and oxaliplatin \[R-gem/ox\]), radiation, corticosteroids, as well as novel therapies such as BTK inhibitors (e.g.: Ibrutinib), immunomodulators (e.g.: lenalidomide), monoclonal antibodies (e.g.: rituximab, obinutuzumab, tafasitamab) antibody drug conjugates (e.g: loncastuximab), checkpoint inhibitors (e.g.: pembrolizumab, nivolumab), clinical trial treatments, etc. * If a participant receives polatuzumab vedotin or mosunetuzumab as bridging they will ineligible to continue on step 1 registration portion of the study and be ineligible for step 2 randomization * STEP 1: REGISTRATION: PET-CT scan must be planned for completion within 60 days prior to the start of LD chemotherapy. * All pre-CAR T-cell therapy disease must be assessed and documented on the baseline/pre-registration tumor assessment form. * If receiving bridging therapy, participants must have a PET-CT scan upon completion of all planned bridging therapy. If the PET-CT scan after completion of bridging therapy is consistent with complete remission per Lugano criteria as determined by enrolling physician, that participant will be ineligible for step 2 randomization. * Participants are permitted to receive corticosteroids after leukapheresis without the need to repeat a PET-CT scan. If steroids are used, they must be planned to stop no later than 3 days before CAR -T cell infusion. * If response assessment by central review cannot be completed (I.e., poor quality of PET-CT scan, PET-CT performed out of window, etc.) this would be recorded as 'inadequate assessment' and patient would not be eligible for randomization * STEP 1: REGISTRATION: Participants that have previously been treated with polatuzumab vedotin or mosunetuzumab prior to CAR T-cell leukapheresis for either indolent or aggressive NHL are eligible as long as the participant did not have refractory disease or progression/relapse within 6 months of the last infusion with either agent * STEP 1: REGISTRATION: Participants must be planning to receive CAR T-cell infusion no earlier than 2 days and no later than 14 days after completion of the last day of lymphodepleting chemotherapy. Any participant receiving CAR T-cell infusion outside of this window will be ineligible for step 2 randomization * STEP 1: REGISTRATION: LD chemotherapy prior to CAR T-cell infusion must be planned to start within 60 days after step 1 registration * STEP 1: REGISTRATION: Participants must be \>= 18 years of age at the time of registration * STEP 1: REGISTRATION: Participants must have Zubrod performance score (PS) of 0, 1, or 2 * STEP 1: REGISTRATION: Total bilirubin =\< 2 x institutional upper limit of normal (ULN) (within 14 days prior to registration) * Unless due to Gilbert's disease or lymphomatous involvement of liver * STEP 1: REGISTRATION: Aspartate aminotransferase (AST) and alanine aminotransferase (ALT) =\< 3 x institutional ULN (within 14 days prior to registration) * STEP 1: REGISTRATION: Creatinine clearance \>= 40 mL/min, as estimated by the Cockcroft and Gault formula. The creatinine value used in the calculation must have been obtained within 14 days prior to registration. Estimated creatinine clearance is based on actual body weight * STEP 1: REGISTRATION: Participants must have an echocardiogram (ECHO) or multigated acquisition scan (MUGA) within 60 days prior to registration with a cardiac ejection fraction \>= 40%. * Participants with current symptoms of cardiac disease must have a clinical risk assessment of cardiac function using the New York Heart Association Functional Classification. To be eligible for this trial, participants must be class 2B or better. * Participants must not have documented myocardial infarction and percutaneous coronary intervention (PCI) within 6 months prior to registration or myocardial infarction without PCI within 3 months of registration, or unstable angina * STEP 1: REGISTRATION: Participants with peripheral neuropathy must have \< grade 2 * STEP 1: REGISTRATION: Participants with hepatitis B virus infection must have undetectable viral load within 14 days prior to registration, be on suppressive therapy and have no evidence of hepatitis B virus (HBV) related hepatic damage * STEP 1: REGISTRATION: Participants with hepatitis C infection must have eradication therapy completed, have no evidence of hepatitis C infection (HCV) related damage and have undetectable viral load within 14 days prior to registration * STEP 1: REGISTRATION: Participants with known human immunodeficiency virus (HIV)-infection must be on effective anti-retroviral therapy at time of registration and have undetectable viral load test on the most recent test results obtained within 6 months prior to registration * STEP 1: REGISTRATION: Participants must be offered the opportunity to participate in banking for planned translational medicine and future research. With participant consent, any residuals from the mandatory tissue submission will also be banked for future research. * Note: Streck tubes must be ordered in advance. Please allow 5-7 days for shipment of the collection kits * STEP 1: REGISTRATION: NOTE: As a part of the OPEN registration process the treating institution's identity is provided in order to ensure that the current (within 365 days) date of institutional review board approval for this study has been entered in the system. * Participants must be informed of the investigational nature of this study and must sign and give informed consent in accordance with institutional and federal guidelines. * For participants with impaired decision-making capabilities, legally authorized representatives may sign and give informed consent on behalf of study participants in accordance with applicable federal, local, and Central Institutional Review Board (CIRB) regulations * STEP 2: RANDOMIZATION: Participants must have met all eligibility criteria for step 1 registration * STEP 2: RANDOMIZATION: Participant's CAR T-cell product must have met specification parameters to be given as an FDA approved commercial product * STEP 2: RANDOMIZATION: Participants must have a PET-CT scan between days 25-40 after CAR T-cell infusion and determined to have a response consistent with stable disease or partial remission by central review compared to most recent pre-LD chemo/CAR T-cell PET-CT scan. * Note: Patients with delayed enrollment \> 21 days after 'day +30' PET-CT scan will necessitate a repeat PET-CT scan if concerning signs or symptoms of lymphoma progression develop. * Note: If response assessment by central review cannot be completed (I.e., poor quality of PET-CT scan, PET-CT performed out of window, etc.) this would be recorded as 'inadequate assessment' and patient would not be eligible for randomization * STEP 2: RANDOMIZATION: Eligible participants must be randomized no later than 60 days after CAR -T infusion * STEP 2: RANDOMIZATION: Participants must have started LD chemotherapy within 60 days of signing consent for step 1 registration * STEP 2: RANDOMIZATION: Participants must have S2114 CAR T-cell therapy form submitted to Southwest Oncology Group (SWOG) prior to step 2 randomization * STEP 2: RANDOMIZATION: Participants must have had a PET-CT scan upon completion of all planned bridging therapy if received, with the exception of up to 7 days of corticosteroids. If the PET-CT scan after completion of bridging therapy was consistent with complete remission per Lugano criteria as determined by enrolling physician, that participant will be ineligible for step 2 randomization. * If response assessment by central review cannot be completed (I.e., poor quality of PET-CT scan, PET-CT performed out of window, etc.) this would be recorded as 'inadequate assessment' and patient would not be eligible for randomization * STEP 2: RANDOMIZATION: Participants must

have Zubrod PS of 0, 1, or 2 * STEP 2: RANDOMIZATION: Absolute neutrophil count (ANC) \>= 1.0 x 10\^3/uL and participants must not have received myeloid growth factor within 72 hours prior to this lab being drawn (within 7 days prior to step 2 randomization) * STEP 2: RANDOMIZATION: Platelets \>= 75 x 10\^3/uL and participants must not have received platelet transfusion within 72 hours prior to this lab being drawn (within 7 days prior to step 2 randomization) * STEP 2: RANDOMIZATION: Total bilirubin =\< 2 x institutional ULN (within 7 days prior to step 2 randomization) * Unless due to Gilbert's disease or lymphomatous involvement of liver * STEP 2: RANDOMIZATION: AST and ALT =\< 3 x institutional ULN (within 7 days prior to step 2 randomization) * STEP 2: RANDOMIZATION: Creatinine clearance \>= 40 mL/min, as estimated by the Cockcroft and Gault formula. The creatinine value used in the calculation must have been obtained within 7 days prior to step 2 randomization. Estimated creatinine clearance is based on actual body weight (within 7 days prior to step 2 randomization) * STEP 2: RANDOMIZATION: Participants with peripheral neuropathy must have \< grade 2 * STEP 2: RANDOMIZATION: Participants with current symptoms of cardiac disease must have a clinical risk assessment of cardiac function using the New York Heart Association Functional Classification. To be eligible for this trial, participants must be class 2B or better * STEP 2: RANDOMIZATION: Participants with history of hepatitis B viral infection must have undetectable viral load within 14 days prior to step 2 randomization and on suppressive therapy * STEP 2: RANDOMIZATION: Participants with history of hepatitis C viral infection must have undetectable viral load within 14 days prior to step 2 randomization * STEP 2: RANDOMIZATION: Participants with known human immunodeficiency virus (HIV)-infection must be continuing to receive anti-retroviral therapy and have an undetectable viral load test within 14 days prior to step 2 randomization * STEP 3: CROSSOVER REGISTRATION (ARM 4 ONLY): Participants must have documented disease progression while on Arm 4 (observation) on this protocol. The follow-up tumor assessment form documenting disease progression must be submitted to SWOG prior to step 3 crossover registration * STEP 3: CROSSOVER REGISTRATION (ARM 4 ONLY): Participants must be registered within 28 days of the date of progression * STEP 3: CROSSOVER REGISTRATION (ARM 4 ONLY): Participants must have imaging that clearly demonstrates progression compared to day +30 PET-CT scan * Note: These scans should be performed as standard of care and only performed between scheduled response assessments required for study if symptoms arise that are concerning for progression * STEP 3: CROSSOVER REGISTRATION (ARM 4 ONLY): Participants must have Zubrod PS of 0, 1, or 2 * STEP 3: CROSSOVER REGISTRATION (ARM 4 ONLY): ANC \>= 1.0 x 10\^3/uL and participants must not have received myeloid growth factor within 72 hours prior to this lab being drawn (within 14 days prior to step 3 crossover registration) * STEP 3: CROSSOVER REGISTRATION (ARM 4 ONLY): Platelets \>= 75 x 10\^3/uL and participants must not have received platelet transfusion within 72 hours prior to this lab being drawn (within 14 days prior to step 3 crossover registration) * STEP 3: CROSSOVER REGISTRATION (ARM 4 ONLY): Total bilirubin =\< 2 x institutional ULN (within 14 days prior to step 3 crossover registration) * Unless due to Gilbert's disease or lymphomatous involvement of liver * STEP 3: CROSSOVER REGISTRATION (ARM 4 ONLY): AST and ALT =\< 3 x institutional ULN * STEP 3: CROSSOVER REGISTRATION (ARM 4 ONLY): Creatinine clearance \>= 40 mL/min, as estimated by the Cockcroft and Gault formula. The creatinine value used in the calculation must have been obtained within days prior to step 3 crossover registration. Estimated creatinine clearance is based on actual body weight (within 14 days prior to step 3 crossover registration) * STEP 3: CROSSOVER REGISTRATION (ARM 4 ONLY): Participants with peripheral neuropathy must have \< grade 2 * STEP 3: CROSSOVER REGISTRATION (ARM 4 ONLY): Participants with current symptoms of cardiac disease must have a clinical risk assessment of cardiac function using the New York Heart Association Functional Classification. To be eligible for this trial, participants must be class 2B or better * STEP 3: CROSSOVER REGISTRATION (ARM 4 ONLY): Participants with history of hepatitis B viral infection must have undetectable viral load within 14 days prior to step 3 crossover registration and on suppressive therapy * STEP 3: CROSSOVER REGISTRATION (ARM 4 ONLY): Participants with history of hepatitis C viral infection must have undetectable viral load within 14 days prior to step 3 crossover registration * STEP 3: CROSSOVER REGISTRATION (ARM 4 ONLY): Participants with known human immunodefici

Conditions & Interventions

Interventions:
BIOLOGICAL: Axicabtagene Ciloleucel, PROCEDURE: Biospecimen Collection, PROCEDURE: Computed Tomography, DRUG: Cyclophosphamide, DRUG: Fludarabine, BIOLOGICAL: Lisocabtagene Maraleucel, BIOLOGICAL: Mosunetuzumab, OTHER: Patient Observation, DRUG: Polatuzumab Vedotin, PROCEDURE: Positron Emission Tomography, BIOLOGICAL: Tisagenlecleucel
Conditions:
Diffuse Large B-Cell Lymphoma, Grade 3b Follicular Lymphoma, Primary Mediastinal (Thymic) Large B-Cell Lymphoma, Recurrent Diffuse Large B-Cell Lymphoma, Refractory Diffuse Large B-Cell Lymphoma, Transformed Follic Lymph to Diff Large B-Cell Lymphoma, Transformed Marg Zone Lymph to Diff Large B-Cell Lymphoma

More Information

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