

History of Changes for Study: NCT00968760

Autologous CD19-specific T Cells Infusion

[Latest version \(submitted June 27, 2020\) on ClinicalTrials.gov](#)

- A study version is represented by a row in the table.
- Select two study versions to compare. One each from columns A and B.
- Choose either the "Merged" or "Side-by-Side" comparison format to specify how the two study versions are to be displayed. The Side-by-Side format only applies to the Protocol section of the study.
- Click "Compare" to do the comparison and show the differences.
- Select a version's Submitted Date link to see a rendering of the study for that version.
- The yellow A/B choices in the table indicate the study versions currently compared below. A yellow table row indicates the study version currently being viewed.
- Hover over the "Recruitment Status" to see how the study's recruitment status changed.
- Study edits or deletions are displayed in **red**.
- Study additions are displayed in **green**.

Study Record Versions

Version	A	B	Submitted Date	Changes
1	☒	☒	August 28, 2009	None (earliest Version on record)
2	☐	☐	February 26, 2010	Study Status
3	☐	☐	August 3, 2010	Eligibility, Study Status, Study Design and Study Description
4	☐	☐	August 6, 2010	Oversight and Study Status
5	☐	☐	October 4, 2010	Study Status
6	☐	☐	March 15, 2011	Study Status, Eligibility, Conditions and Study Description
7	☐	☐	May 5, 2011	Study Status and Arms and Interventions
8	☐	☐	May 27, 2011	Study Status
9	☐	☐	June 13, 2011	Study Status, Eligibility and Study Description
10	☐	☐	June 20, 2011	Recruitment Status, Study Status and Contacts/Locations
11	☐	☐	September 26, 2011	Sponsor/Collaborators, Study Status, Eligibility and Study Description
12	☐	☐	September 27, 2011	Study Status
13	☐	☐	January 19, 2012	Study Status and Eligibility
14	☐	☐	March 20, 2012	Eligibility, Study Status and Study Description
15	☐	☐	March 30, 2012	Study Status
16	☐	☐	April 5, 2012	Study Status
17	☐	☐	August 3, 2012	Study Status
18	☐	☐	August 14, 2012	Study Status
19	☐	☐	February 14, 2013	Study Status
20	☐	☐	August 14, 2013	Study Status and Arms and Interventions
21	☐	☐	February 17, 2014	Study Status
22	☐	☐	March 7, 2014	Eligibility, Arms and Interventions, Study Status, Outcome Measures, Study Design, Study Description, Sponsor/Collaborators and Study Identification
23	☐	☐	May 30, 2014	Study Status, Eligibility and Study Description
24	☐	☐	September 2, 2014	Contacts/Locations, Study Status, References and Study Description
25	☐	☐	January 15, 2015	Study Status and Study Description
26	☐	☐	January 27, 2015	Study Status
27	☐	☐	February 3, 2015	Eligibility and Study Status
28	☐	☐	February 16, 2015	Study Status
29	☐	☐	February 20, 2015	Study Status
30	☐	☐	April 8, 2015	Study Status
31	☐	☐	May 8, 2015	Recruitment Status, Study Status, Contacts/Locations and Study Identification
32	☐	☐	June 5, 2015	Study Status and Study Description
33	☐	☐	June 23, 2015	Study Status

Version	A	B	Submitted Date	Changes
34	☐	☐	September 14, 2015	Study Status and Sponsor/Collaborators
35	☐	☐	April 5, 2016	Eligibility, Study Status and Study Description
36	☐	☐	December 2, 2016	Study Description, Study Status and Study Identification
37	☐	☐	December 12, 2016	Study Status
38	☐	☐	January 8, 2018	Study Status and Oversight
39	☐	☐	January 11, 2019	Study Status
40	☐	☐	May 17, 2019	Study Status
41	☐	☐	January 7, 2020	Study Status
42	☐	☐	June 27, 2020	Recruitment Status, Study Status and Study Design

Compare

Comparison Format: ☒ Merged
☐ Side-by-Side

[Scroll up to access the controls](#)

Study NCT00968760
Submitted Date: August 28, 2009 (v1)

▼ Study Identification

Unique Protocol ID: 2007-0635
Brief Title: Autologous CD19-specific T Cells Infusion
Official Title: CD19-specific T Cell Infusion in Patients With B-Lineage Lymphoid Malignancies After Autologous Hematopoietic Stem Cell Transplantation
Secondary IDs:

▼ Study Status

Record Verification: August 2009
Overall Status: Not yet recruiting
Study Start: October 2009
Primary Completion: October 2011 [Anticipated]
Study Completion:
First Submitted: August 28, 2009
First Submitted that August 28, 2009
Met QC Criteria:
First Posted: August 31, 2009 [Estimate]
Last Update Submitted that August 28, 2009
Met QC Criteria:
Last Update Posted: August 31, 2009 [Estimate]

▼ Sponsor/Collaborators

Sponsor: M.D. Anderson Cancer Center
Responsible Party:
Collaborators:

▼ Oversight

U.S. FDA-regulated Drug:
U.S. FDA-regulated Device:
Data Monitoring: No

▼ Study Description

Brief Summary: The goal of this clinical research study is to learn if an investigational type of gene transfer can be given reliably and safely in patients with advanced B-cell lymphoma. B cells are a type of white blood cell that fights infection and disease. Lymphoma is a type of cancer that affects the immune system, including B cells.
The gene transfer involves drawing blood, separating out T cells (white blood cells that fight infection and disease), changing the T cells' DNA (genetic material) in a specific way, and returning the changed T cells back to the body.
Researchers want to learn the highest dose of the changed T cells that can be given safely. Researchers also want to learn how long the changed T cells remain in the participant's body, and if the changed T cells can reliably treat B-cell lymphoma. Finally, researchers want to learn if interleukin-2 (IL-2) can help the changed T cells last longer in the body.
Detailed Description: Study Plan:
This study has 3 steps: chemotherapy, a stem cell transplant, and gene transfer.
The chemotherapy combination in this study (carmustine [BiCNU®], cytarabine [Cytosar-U®], etoposide [Vepesid®], melphalan [Alkeran®], and rituximab [Rituxan®]) is given to try to destroy any remaining tumor cells and prepare the body for the stem cell transplant and T cell infusion.

A stem cell transplant is designed to help the body attack the cancer cells that may remain after chemotherapy.

The gene transfer involves drawing blood, separating out T cells, changing the cells' DNA in the laboratory, and returning the genetically changed cells back to the body. T cells are a type of white blood cell that fight infection. The type of gene transfer being used in this study is designed to help your T cells better fight B-cell lymphoma. These genetically changed T cells are designed to fight B-cell lymphoma by targeting CD19 (a chemical "marker" that is found on certain B-cell lymphoma cells).

IL-2 (Proleukin®) is designed to help T cells grow. In this study, researchers want to learn if it can help the genetically changed T cells grow and last longer in the body.

Study Groups:

If you are found to be eligible to take part in this study, you will be assigned to a dose level of T cells, with or without IL-2, based on when you joined this study.

The first group of participants will receive the lowest dose of T cells. Each new group will receive a higher dose of T cells than the group before it, if no intolerable side effects were seen. Up to 4 dose levels of T cells will be tested:

- The first 15 participants (Group 1) will receive a low dose of T cells without IL-2.
- The next 15 participants (Group 2) will receive a higher dose of T cells with IL-2.
- The next 15 participants (Group 3) will receive a higher dose of T cells without IL-2.
- The next 15 participants (Group 4) will receive a higher dose of T cells with IL-2.

Groups 2 and 4 will receive the same dose level of IL-2.

Tests Before Leukapheresis:

Before each of the 2 leukapheresis procedures (described below), the following tests and procedures will be performed:

- Blood (about 4 tablespoons) will be drawn and used for routine tests and to look for diseases such as hepatitis and HIV.
- A chest X-ray will be performed to check for infection.
- You will have an electrocardiogram (ECG -- a test that measures the electrical activity of the heart).

Leukapheresis #1 (For Collecting T Cells):

You will visit the Apheresis Clinic at M. D. Anderson to have leukapheresis performed. Leukapheresis is a procedure for removing blood from the body in order to collect specific blood cells. The remaining blood is then returned to the body.

Blood will be drawn through a needle in a vein in one arm, then passed through a machine, and then the remaining blood will be returned back to you through a needle in a vein in your other arm. The machine will remove a sample of your white blood cells. This process will take about 3 hours to complete.

Your white blood cell sample will be sent to a lab at M. D. Anderson so the genetically modified T cell product can be made. The modified T cells will be grown in the lab.

If researchers see that certain types of unwanted T cells are growing too much, an investigational device called a CliniMACS® device will be used. This device is designed to filter out certain types of unwanted T cells using a special magnet. It will take about 7 weeks to modify and grow the necessary number of genetically modified T cells. If researchers are unable to create a high enough dose of T cells for you in the lab, you will be taken off study.

Placement of Central Venous Catheter:

Before the second leukapheresis, you will receive a central venous catheter. This is a sterile flexible tube that will be placed into a large vein in your upper chest, while you are under local anesthesia. The study investigator will explain this procedure to you in more detail, and you will be required to sign a separate consent form for it.

When possible, all drugs that need to be given by vein will be given using the catheter. You will also receive the T cell product through the catheter.

Leukapheresis #2 (For Collecting Stem Cells):

About a month after your first leukapheresis, you will return to have the procedure repeated a second time. This time, the blood cells collected will be a sample of blood-forming stem cells. The stem cells will be given back to you after your chemotherapy. If a high enough number of stem cells cannot be collected, however, you will be taken off study.

A stem cell transplant is part of this study's treatment plan, but in some cases, participants in this study will have their stem cells collected as part of another research study or for routine care.

Chemotherapy and Stem Cell Transplant:

After your stem cells have been successfully collected, you will be admitted to the hospital to receive chemotherapy. You will stay in the hospital for about 3-4 weeks.

- On Day 1, you will receive carmustine by vein over 1 hour. Every 12 hours on Days 2-5, you will receive cytarabine by vein over 1 hour and etoposide by vein over 3 hours.
- On Day 6, you will receive melphalan by vein over 30 minutes.
- On Day 7, the stem cells that were collected earlier will be given back to you ("transplanted") by vein over 30-45 minutes. Day 7 is also called Day 0, since it is the day of the transplant. The days after the transplant are called Days +1, +2, and so on.
- On Days +1 and +8, you will receive rituximab by vein over 4-6 hours.

After the stem cell transplant, the study investigator will decide if you are still eligible to receive the T cell infusion (and IL-2, if you are assigned to receive it). If you have any infections or intolerable side effects, or if you are taking certain types of steroids by mouth or injection, you will be taken off study. If you do not receive the T cell infusions, you would not need to return for the follow-up described below.

T Cell Infusion (Gene Transfer):

You will receive the T cell infusion sometime between Day +2 through Day +7. (The exact day will be as soon as you are eligible.) The T cell infusion will be given by vein over 15-30 minutes. During the infusion, your vital signs will be checked.

Before the T cell infusion, you will receive drugs to lower your risk of allergic reaction to the T cells. Acetaminophen (Tylenol®) will be given by mouth, and diphenhydramine (Benadryl®) will be given by vein over a few minutes.

IL-2 Administration:

If you are in Group 2 or 4, IL-2 will be injected under the skin, once a day for up to 14 days. The first dose will be on the day of your T cell infusion.

Before each IL-2 injection, you will receive drugs to lower your risk of allergic reaction to the IL-2. Acetaminophen will be given by mouth. Diphenhydramine will be given by mouth, or by vein over a few minutes.

Study Tests:

Every day while you are in the hospital, blood (about 2 teaspoons) will be drawn for routine tests.

At 1 day, 3 days, 1 week, and 2 weeks after the T cell infusion, blood (about 2 teaspoons each time) will be drawn for research to look for the modified T cells and to measure the number of B cells and other (non-modified) T cells. Like T cells, B cells are part of your immune system.

Follow-Up:

At about 1, 3, 6, and 12 months after the stem cell transplant, you will return for follow-up visits. At each visit, the following tests and procedures will be performed:

- Blood (about 1-2 tablespoons) will be drawn for routine tests and for research to look for the modified T cells and to measure the number of B cells and other T cells.
- CT scans will be performed to check the status of the disease. Other tests to check your health may also be performed if needed, such as bone marrow aspirations and biopsies.

If the disease comes back or a side effect occurs during the 12 months after the stem cell transplant, you may be asked to return for additional follow-up visits as needed.

Length of Study Participation:

If you have any infections or intolerable side effects, you will be taken off study early.

If you complete the study as planned, you will be off-study after your last follow-up visit.

Long-Term Follow-Up:

For safety reasons, the U.S. Food and Drug Administration (FDA) requires patients receiving gene transfer to have long-term follow-up for at least 15 years after receiving the gene transfer. You will be asked to sign a separate consent form for long-term follow up. That study is known as Protocol 2006-0676, and the follow-up will begin 1 year after the gene transfer study.

This is an investigational study. The chemotherapy and stem cell transplant in this study are commercially available and FDA approved. The gene transfer (infusion with a genetically modified T cell product), this study's usage of IL-2, and the CliniMACS device are not commercially available or FDA approved. At this time, gene transfer and using IL-2 and the CliniMACS device for this study's purpose are only being used in research.

Up to 15 patients will take part in this study. All will be enrolled at M. D. Anderson.

▼ Conditions

Conditions: Lymphoma
B-Cell Lymphoma

Keywords: CD19+ lymphoid malignancies
non-Hodgkin's Lymphoma
NHL
small lymphocytic lymphoma
SLL
follicular lymphoma
mantle cell lymphoma
gene cell transfer
CD19-specific T cells
Stem Cell Transplant
T Cell Infusion
Chemotherapy
Leukapheresis
BCNU
carmustine
Cytarabine
Etoposide
Interleukin-2
Proleukin
Melphalan
Rituximab
T cell therapy

▼ Study Design

Study Type: Interventional

Primary Purpose: Treatment

Study Phase: Phase 1

Interventional Study Model: Single Group Assignment

Number of Arms: 2

Masking: None (Open Label)

Allocation: Non-Randomized

Enrollment: 15 [Anticipated]

▼ Arms and Interventions

Arms	Assigned Interventions
Experimental: CD19-specific T cell Infusion without IL-2 Group 1 - low dose of T cells without IL-2. Group 3 - higher dose of T cells without IL-2.	Procedure: Leukapheresis Leukapheresis #1 - For Collecting T Cells Leukapheresis #2 - For Collecting Stem Cells, month following #1 Blood drawn through vein, passed through a machine to collect specific blood cells, then remaining blood returned, about 3 hours to complete. Procedure: Stem Cell Transplant Stem cell infusion by vein over 30-45 minutes on Day 0 Other Names: • SCT

Arms	Assigned Interventions
	Procedure: CD19-specific T Cell Infusion T Cell Infusion (Gene Transfer) by vein over 15-30 minutes sometime between Day +2 through Day +7. Drug: Carmustine 300 mg/m² IV over 1 hour on Day -6 Other Names: • BCNU • BiCNU Drug: Etoposide 200 mg/m² IV over 3 hours every 12 hours on Days -5 to -2 Other Names: • VePesid Drug: Cytarabine 200 mg/m² IV over 1 hour every 12 hours on Days 2-5 Other Names: • Ara-C • Cytosar • DepoCyt • Cytosine Arabinosine Hydrochloride Drug: Melphalan 140 mg/m² IV over 30 minutes on Day -1 Other Names: • Alkeran Drug: Rituximab 375 mg/m² IV over 4 to 6 hours on Day +1 Other Names: • Rituxan
Experimental: CD19-specific T cell Infusion with IL-2 Group 2 - higher dose of T cells with IL-2. Group 4 - higher dose of T cells with IL-2.	Procedure: Leukapheresis Leukapheresis #1 - For Collecting T Cells Leukapheresis #2 - For Collecting Stem Cells, month following #1 Blood drawn through vein, passed through a machine to collect specific blood cells, then remaining blood returned, about 3 hours to complete. Procedure: Stem Cell Transplant Stem cell infusion by vein over 30-45 minutes on Day 0 Other Names: • SCT Procedure: CD19-specific T Cell Infusion T Cell Infusion (Gene Transfer) by vein over 15-30 minutes sometime between Day +2 through Day +7. Drug: IL-2 Group 2 or 4, IL-2 dose of 0.3 x 10⁶ U/m² injected under skin, once a day for up to 14 days; first dose on day of T cell infusion. Other Names: • Interleukin-2 • Proleukin Drug: Carmustine 300 mg/m² IV over 1 hour on Day -6 Other Names: • BCNU • BiCNU Drug: Etoposide 200 mg/m² IV over 3 hours every 12 hours on Days -5 to -2 Other Names: • VePesid Drug: Cytarabine 200 mg/m² IV over 1 hour every 12 hours on Days 2-5 Other Names: • Ara-C • Cytosar • DepoCyt • Cytosine Arabinosine Hydrochloride Drug: Melphalan 140 mg/m² IV over 30 minutes on Day -1 Other Names: • Alkeran Drug: Rituximab 375 mg/m² IV over 4 to 6 hours on Day +1 Other Names: • Rituxan

▼ Outcome Measures

Primary Outcome Measures:

1. Maximum Tolerated Dose (MTD) of T-cells ± IL-2
[Time Frame: Continuously monitored up to infusions (+14 days) then at 1 day, 3 days, 1 week, and 2 weeks after T cell infusion]

▼ Eligibility

Minimum Age:

Maximum Age: 70 Years

Sex: All

Gender Based:

Accepts Healthy Volunteers: No

Criteria: Inclusion Criteria:

1. Inclusion at study enrollment (criteria 1-5): Patients with a history of CD19+ lymphoid malignancies: non-Hodgkin's Lymphoma (NHL), small lymphocytic lymphoma (SLL), follicular lymphoma, or mantle cell lymphoma that are beyond first relapse or primary refractory to treatment.
2. Age less than or equal to 70 years.
3. Zubrod performance 0-2 or Lansky PS greater than or equal to 50%.
4. Patient or patient's legal representative, parent(s) or guardian able to provide written informed consent. Assent of a minor if participant's age is at least seven and less than eighteen years.
5. Patient or patient's legal representative, parent(s) or guardian able to provide written informed consent for the long-term follow-up gene therapy study. Assent of a minor if participant's age is at least seven and less than eighteen years.
6. Eligibility at time of transplant conditioning regimen (criteria 6-13): Zubrod performance 0-2 or Lansky PS greater than or equal to 50%.
7. Left ventricular ejection fraction >40%. No uncontrolled arrhythmias or uncontrolled symptomatic cardiac disease.
8. No symptomatic pulmonary disease. FEV1, FVC and DLCO >50% of expected, corrected for hemoglobin. If unable to perform pulmonary function test (most children < 6 years of age), pulse oximetry ≥ 92% on room air.
9. Serum creatinine <1.8mg/dL or creatinine clearance > 40 cc/min
10. Adequate hepatic function, as defined by SGPT <3 X upper limit of normal; serum bilirubin and alkaline phosphatase <2 X upper limit of normal, or considered not clinically significant.
11. If positive Hepatitis B and/or Hepatitis C serology, discuss with Principal Investigator or designee and consider liver biopsy.
12. No pleural/pericardial effusion or ascites estimated to be >1L.
13. Not breast feeding or pregnant. Pregnancy determined by a positive beta HCG test in a woman with child bearing potential, defined as not post-menopausal for 12 months or no previous surgical sterilization.
14. Eligibility at time of T-cell infusion (criteria 14-15): No systemic corticosteroids within 3 days prior to T-cell infusion.
15. Not experiencing any new Grade >2 (CTC version 3) adverse neurologic, pulmonary, cardiac, gastrointestinal, renal or hepatic (excluding albumin) event within 24 hours prior to T-cell infusion.
16. Eligibility criteria for administration of IL-2 after T-cell infusion: Absence of new adverse event of grade >2 (CTC vs. 3) involving cardiopulmonary, hepatic (excluding albumin), gastrointestinal, neurologic, or renal toxicity probably or definitely attributed to infused T cells within one week of cells.

Exclusion Criteria:

1. Positive beta HCG in female of child-bearing potential defined as not post-menopausal for 12 months or no previous surgical sterilization.
2. Active CNS disease in patient with history of CNS malignancy.
3. Patients with known allergy to bovine or murine products.
4. Positive serology for HIV.

▼ Contacts/Locations

Central Contact Person: Partow Kebriaei, MD
Telephone: 713-745-0663

Study Officials: Partow Kebriaei, MD
Study Chair
UT MD Anderson Cancer Center

Locations: **United States, Texas**

UT MD Anderson Cancer Center
Houston, Texas, United States, 77030
Contact: Principal Investigator: Partow Kebriaei, MD

▼ IPDSharing

Plan to Share IPD:

▼ ReferencesLinks: URL: <http://www.mdanderson.org>

Description: UT MD Anderson Cancer Center website

Available IPD/Information:

[Scroll up to access the controls](#)[Scroll to the Study top](#)[U.S. National Library of Medicine](#) | [U.S. National Institutes of Health](#) | [U.S. Department of Health & Human Services](#)