Phase 1 Clinical Trial of Autologous GD2 Chimeric Antigen Receptor T Cells for Diffuse Intrinsic Pontine Gliomas and Spinal Diffuse Midline Glioma

Grant Award Details

Phase 1 Clinical Trial of Autologous GD2 Chimeric Antigen Receptor T Cells for Diffuse Intrinsic Pontine Gliomas and Spinal Diffuse Midline Glioma

Grant Type: Clinical Trial Stage Projects

Grant Number: CLIN2-12595

Project Objective: Complete a Phase 1 clinical trial of autologous GD2 CAR-T cells for the treatment of Diffuse Intrinsic Pontine Gliomas (DIPG) or Spinal Diffuse Midline Gliomas (DMG)

Investigator:

Name:	Crystal Mackall
Institution:	Stanford University
Type:	PI

Disease Focus: Brain Cancer, Cancer, Solid Tumors

Human Stem Cell Use: Adult Stem Cell

Award Value: $11,998,310

Status: Active

Grant Application Details

Application Title: Phase 1 Clinical Trial of Autologous GD2 Chimeric Antigen Receptor T Cells for Diffuse Intrinsic Pontine Gliomas and Spinal Diffuse Midline Glioma

Public Abstract:

Therapeutic Candidate or Device

Autologous T cells genetically engineered to express a Chimeric Antigen Receptor targeting GD2 (GD2-CART)

Indication

Brain tumors in children and young adults: Diffuse Intrinsic Pontine Gliomas (DIPG) and Spinal Diffuse Midline Glioma (DMG)

Therapeutic Mechanism

Progenitor GD2-CART cells will recognize DIPG/DMG cancer cells expressing GD2, become activated, divide, and kill the cancer cells.

Unmet Medical Need

DIPG, the leading cause of childhood brain tumor death, is uniformly fatal. Many clinical trials have explored the use of various therapeutic agents for DIPG. However, no improvement in overall survival has been demonstrated to date. Thus, there is an urgent need for novel effective therapies.

Project Objective

Phase 1 trial completed

Major Proposed Activities

- Determine recommended Phase 2 dose of therapeutic for patients with DIPG and Spinal DMG
- Assess toxicity of GD2CAR T cells
- Assess clinical activity of GD2CAR T cells in children and young adults with DIPG and Spinal DMG.

Statement of Benefit to California:

Brain tumors are the leading cause of cancer related death in children. Among these, DIPG and DMGs are the most aggressive and are universally fatal with current standard therapies, with median overall survival of 11 months for DIPG. We propose to conduct a Phase I clinical trial of novel GD2 targeting CAR T cells, which have shown impressive antitumor activity in preclinical studies. If successful, this therapy would transform the landscape for this universally lethal pediatric brain tumor.

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