What is Pelizaeus-Merzbacher Disease (PMD)?

Pelizaeus-Merzbacher Disease (PMD), is a rare inherited condition involving the central nervous system. Children with PMD are unable to form myelin. This results in impaired language development and memory, delayed motor skills with poor coordination, and the inability to walk.

This study focuses on connatal PMD, the most severe type, which causes apoptosis (cell death) of oligodendrocytes, the cells which form myelin.

Study Introduction

This phase I safety study is coordinated through the University of California San Francisco Children's Hospital (UCSF) and sponsored by StemCells, Inc. Children found eligible for the study will undergo an operation that implants human central nervous system stem cells (HuCNS-SC® cells) into their brain. The study will examine whether HuCNS-SC® cells can be safely transplanted in children with a myelin disorder.

Team of Doctors

UCSF doctors with many different specialties will be involved in this study. They are available for any questions or concerns you may have.

David Rowitch, MD, PhD
Professor of Pediatrics and Neurological Surgery
Chief of Neonatology

Jonathan Strober, MD
Associate Clinical Professor, Neurology & Pediatrics
Director, Pediatric Muscular Dystrophy Assoc. Clinic

Nalin Gupta, MD, PhD
Associate Professor, Neurological Surgery
Chief of Pediatric Neurological Surgery

How to contact the study team

Prospective families, with a child with PMD, or their doctors can contact UCSF at 1-800-793-3887 for information and preliminary screening. The study will be explained and, if the family is interested and the child is an appropriate study candidate the team at UCSF will ask for specific medical information.

Additional Information

UCSF Neonatology
Newborn Brain Research Institute
http://neonatology.ucsf.edu/nbri

StemCells Inc.
http://www.stemcellsinc.com


Coordinated by University of California San Francisco Children’s Hospital and sponsored by StemCells, Inc.
This study will enroll four male subjects age six months to five years of age. To be eligible, children must be determined to have the connatal form of PMD confirmed with genetic testing, clinical symptoms and radiology images (MRI).

The procedures and most follow-up studies will occur at the University of California San Francisco Children’s Hospital. Travel and lodging arrangements for all visits to UCSF will be coordinated by the UCSF staff and paid for by the study. Expenses for meals will also be reimbursed.

Three main components of the study:

1. The children will undergo an operation that will transplant human central nervous stem cells (HuCNS-SC® cells) into the brain. The surgery requires 1 week in the UCSF hospital and 3 weeks at a family housing facility near UCSF.

2. The children will be on immunosuppression medication for nine months to prevent rejection of the transplanted stem cells.

3. The children will undergo intensive follow-up for one year. In addition, families may be asked to participate in a four year long-term follow-up program to check for any problems associated with the cells.

Evaluation & Enrollment Process

There are four main steps of the evaluation & enrollment process. Prospective families, with a child with PMD, or their doctors can contact UCSF for information and preliminary screening at 1-800-793-3887.

**Step I: Initial Review for Eligibility**
The purpose of the initial screening is to determine if the child meets criteria for a screening evaluation at UCSF. This will include an initial phone screening, review of medical records and imaging studies, and written consent by the parents to obtain their child’s medical records.

**Step II: Screening Evaluation at UCSF**
If your child meets the criteria and you wish to be considered for the trial, a formal evaluation is conducted at UCSF. This evaluation will take 1–3 days and will consist of meetings with the study team and extensive testing of your child.

**Inclusion Criteria**
- Male subjects: from 6 months to 5 years of age
- Genetic testing confirms PLP1 gene mutation
- Reduced brain white matter volume on MRI
- Confirmed clinical diagnosis of connatal PMD
- Family able to comply with follow-up testing
- Family able to understand study and provide consent for their child

**Step III: Enrollment**
If your child is eligible and you choose to continue, your child will be enrolled and you will return home. The stem cell transplant surgery will take place at UCSF and will be scheduled within 3 months time.

**Step IV: Follow-up**
After the surgery, you and your child will return to UCSF at regularly scheduled intervals over a one year period. These will occur at 2, 3, 6, 9, 10, and 12 months after the stem cells are transplanted. At those visits your child will undergo a series of tests. In addition, while you are at home your child will be on 2 medications (an immunosuppressive drug and an antibiotic) for 9 months.

What does the study hope to accomplish?
The study will help doctors learn more about the safety of HuCNS-SC® cells in PMD. The study results will help determine whether further studies with these neural stem cells are safe and warranted. Enrolled children will undergo extensive follow-up for one year.

What are the costs of taking part in the study?
All procedures required by the study will be paid for by the study sponsor, StemCells, Inc. Travel, lodging and meal expenses associated with study participation while at UCSF Children’s Hospital will also be covered. However, costs of your child’s routine medical care will be your responsibility.

Are there benefits to taking part in this study?
There may be no benefit to your child from participating in this study. If there is a benefit, it is uncertain when the effect may occur and how long it may last. However, this study may help doctors learn more about the transplantation of HuCNS-SC® cells and its potential for further studies in PMD.

What are the side effects or risks I can expect?
The doctors will be closely monitoring your child for side effects. All medications and treatments have side effects and, with an investigational product such as HuCNS-SC® cells, these can sometimes not be predicted. The primary purpose of this study is safety. You will be given a consent form to read that will explain all of the possible side effects your child may experience.