



UCLA Center for Clinical AIDS Research and Education

Johnson & Johnson Research

A randomized, controlled trial to evaluate the anti-HIV effects of one's own gene-modified blood stem cells with an anti-HIV gene vs without this gene in patients with HIV-1 infection

Objective and Study Design

The objective of this study is to evaluate the anti-HIV effects of gene-modified stem cells compared to non-modified stem cells in patients with HIV infection. This is randomized, controlled clinical trial, in patients with full viral suppression on their first or second potent, combination antiretroviral regimen (ART). This gene therapy approach involves removing blood stem cells from the patient and treating these cells in the laboratory with a deactivated virus that inserts a gene which opposes the action of HIV in the cell (HIV antisense ribozyme). Patients are assigned randomly to one of two groups: Group A receives their own stem cells that have been taken out of the patient's blood by a special machine and transfused back into the individual without any gene manipulation. Group B will have these cells similarly removed but also treated with the gene insert and then transfused back into the individual. The control group will provide the basis for comparison of safety and efficacy of the gene therapy. The gene insert, OZ1, encodes an anti-HIV-1 ribozyme directed against the HIV *tat* gene which is an important regulatory gene needed for HIV to replicate. The patient's own stem cells (CD34+ cells) give rise to all other blood cells in the body, including T-cells. We believe that the T-cells produced by these gene-modified stem cells will be protected from HIV-infection and replication. This study involves a short, 4 week, treatment interruption to occur 12 weeks after cell infusion. ART will then be resumed for 12 additional weeks and then interrupted again for 8 weeks or longer. The primary end point of this study will be the difference in viral load (set point) between the two groups at 8 and 9 weeks after this second treatment interruption. **Duration of study:** 100 weeks.

Inclusion Criteria

- Men or women between the ages of 18 to 45 years, HIV positive for 6 months or longer.
- Viral load less than 400 copies/mL and CD4 cells greater than 300 cells/mm₃ at least 45 days prior to study entry.
- On first or second antiretroviral therapy regimen with a viral load less than 400 copies/mL
- Women of childbearing age must use approved contraceptive measures
- Able and willing to have blood stem cells taken using a special procedure which will require good veins (see study coordinator).

Exclusion Criteria

- With exception of Kaposi's Sarcoma, any previous or current AIDS defining illness including AIDS related dementia.
- Abnormal laboratory results within 45 days prior to study entry (see study coordinator)
- Use of hydroxyurea or non-standard antiretroviral therapies.
- Use of experimental agents within 30 days.
- Prior gene therapy
- Current pregnancy or breastfeeding.
- Known hypersensitivity to E. Coli.
- Certain blood disorders are exclusionary as well (See Study Coordinator).

Principal Investigator: Ronald Mitsuyasu, MD

Study Coordinator: Glauca Vasquez and Maria Palmer, PA

For More Information, Call: 310.206.6414

IRB #: 02-02-027-03

Expiration Date: December 9, 2005