

Non-Technical Abstract

Leber congenital amaurosis (LCA) is a disease where part of the eye (the retina) is severely diseased. Usually it is detected in affected people within the first few months of life. LCA is incurable and untreatable and there is significantly poor vision at birth. This leads to total blindness. This study will focus on the form of LCA caused by mutations in DNA that makes a certain protein (called the 65 kDa retinal pigment epithelium (RPE-specific protein, or RPE65). Clinical diagnosis is made by function tests of they eye. Doctors can also confirm by a special method (molecular testing) that the *RPE65* is not correct.

The investigators believe that collecting safety data in adolescents and children in the 8-18 year old age group appropriately balances risk and potential benefits for this devastating disease. To be able to treat children with a medicine, it should be tested for safety in children.

Cells are lost over time in people with LCA. Children with LCA in the 8-18 year old age group are appropriate for looking for any harmful effects because people in this age group show evidence for the disease in their cells. Older patients have far fewer cells that could be changed by treatment.

This study uses a gene transfer vector made from an adeno-associated virus (AAV) and is called AAV.RPE65. The AAV parts of the gene transfer work as a delivery vehicle for getting the normal human RPE65 gene into the cells.

This study is called a phase 1 dosing study to assess the safety. The researchers will also look at scientific data from the study.