

HIV Drugs Show Promise in Treating Common Eye Disease

By Will Dunham

WASHINGTON (Reuters)

A class of drugs used for three decades by people infected with the virus that causes AIDS may be effective in treating a leading cause of blindness among the elderly. HIV drugs called nucleoside reverse transcriptase inhibitors (NRTIs), including AZT and three others, blocked age-related macular degeneration in mice and worked well in experiments involving human retinal cells in the laboratory, researchers said.

In HIV-infected people, NRTIs block an enzyme the virus uses to create more copies of itself. The new research shows the drugs also block the activity of a biological pathway responsible for activating inflammatory processes in the body.

It is that previously unrecognized quality that makes NRTIs promising for treating macular degeneration as well as graft-versus-host disease, a rarer ailment that can occur after a stem cell or bone marrow transplant, the researchers said.

University of Kentucky ophthalmologist Dr. Jayakrishna Ambati, who led the study published in the journal *Science*, said macular degeneration affects an estimated 50 million people worldwide.

"With the aging of the population, it is projected to affect 200 million people by the year 2020. It is therefore critical that we develop new and improved treatments for this disease, which is growing like an epidemic," Ambati said.

Macular degeneration causes cells to die in the macula, a part of the eye located near the center of the retina that permits vision in fine detail.

The chronic disease has two forms: "dry" and "wet." Several treatments exist for "wet" macular degeneration but only about a third of patients get significant vision improvement. There are no approved treatments for the "dry" form, which is much more common but less severe.

The "wet" type occurs when abnormal blood vessels grow under the macula and leak blood and fluid. The "dry" form occurs when cells in the macula break down.

In the new study, the NRTIs blocked a powerful collection of proteins that can kill cells in the retina, preserving vision in mice.

Researchers are planning for clinical trials in the coming months and it could be known in as soon as two to three years whether the drugs are effective in treating macular degeneration in people, Ambati said.

Because these inexpensive drugs are already approved by the U.S. Food and Drug Administration and have a good safety record, they could be "repurposed" rapidly to treat other illnesses, he added.