Experimental Treatments for Age-Related Macular Degeneration

**Age-Related Macular Degeneration is the #1 cause of blindness in the US. Johns Hopkins Vision Health Alerts reports on the use of human stem cells to enable the retina to repair itself.**

NEW YORK, NY (PRWEB) March 18, 2008-- Johns Hopkins Vision Health Alerts recently reported on the promising new use of human stem cells to enable the retina to repair itself.

**NEW TREATMENTS FOR MACULAR DEGENERATION**

Several new treatments are under investigation that may help prevent vision loss in people with age-related macular degeneration.

Besides continuing development of treatments to prevent new blood vessel growth, as well as leakage from blood vessels in the eye, researchers are also studying drugs known as angiostatic corticosteroids (such as anecortave acetate, tramcinolone, and flucinolone), sometimes in conjunction with other treatments such as photodynamic therapy.

**PROMISING NEW TREATMENT ON THE HORIZON**

Human retinas damaged by diseases, such as age-related macular degeneration and diabetic retinopathy, are unable to repair themselves.

But now in a report from the National Academy of Sciences (Volume 103, page 12769), researchers at the University of Washington and elsewhere suggest that the regeneration of damaged cells in the retina may someday be possible. Their optimism is based on successful treatment of diseased retinas in mice using human stem cells.

**USING STEMS CELLS: THE STUDY RESULTS SO FAR**

The University of Washington scientists first grew human embryonic stem cells (from a cell line approved in the United States) in a lab, then added growth factors -- proteins that enable cell growth -- central to the development of both human and mouse heads as well as a growth factor essential to a frog's sprouting of large eyes.
Within two weeks -- twice as fast as human cell development -- the embryonic cells became progenitor (forerunner) cells for retinal cells.

The scientists injected these into a damaged mouse retina, where they developed into cones (the retinal cells responsible for color), rods (the cells that allow night vision), and other cells.

The scientists' next step will be to measure the nerve reactions within the repaired mouse retinas to see if vision has improved.

THE BOTTOM LINE

If the research proceeds well, the researchers speculate that human tests using stem cells to repair retinas damaged by age-related macular degeneration might begin in two to three years.


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