New Insights into ADOA from Stoke Therapeutics

Dr. Steve Gross, Senior Medical Director of Clinical Development-Ophthalmology at Stoke Therapeutics, recently spoke at the Cure ADOA Foundation Conference. He shared key updates from the 2025 American Academy of Ophthalmology (AAO) Annual Meeting and explained how these findings are guiding the development of potential new treatments — including STK-002, the medicine being evaluated in Stoke's newly launched OSPREY Phase 1 trial.

At AAO, Prof. Patrick Yu Wai Man presented new two-year findings from Stoke's **FALCON natural history study -** the first longitudinal prospective study of people living with **Autosomal Dominant Optic Atrophy (ADOA)** caused by loss-of-function **OPA1** gene variants. Dr. Gross highlighted how this research is deepening our understanding of ADOA progression and helping to inform the development of STK-002. **What We've Learned from FALCON**

The study followed 47 participants in the U.S., U.K., Italy, and Denmark for 24 months. Key findings include:

- **Gradual progression:** High-contrast visual acuity remained stable over two years, confirming that ADOA changes slowly.
- **Sensitive early markers:** In participants who completed low-contrast vision testing, approximately **one in four** showed vision loss, revealing subtle declines that standard eye exams could not detect.
- **Functional decline precedes structural loss:** Even when small reductions in visual function occur, retinal anatomy remains largely stable.
- **Mitochondrial stress detected:** Using a novel imaging tool (the **OcuMet Beacon**), researchers confirmed increased mitochondrial stress in ADOA, reinforcing the role of mitochondrial health in disease progression.

Looking Ahead: From FALCON to OSPREY

Insights from FALCON are shaping Stoke's clinical development of **STK-002**, an antisense oligonucleotide (ASO) therapy designed to **boost production of the healthy OPA1 protein** in patients who carry one normal and one faulty gene copy.

Early lab studies have shown that STK-002 reaches retinal ganglion cells and increases OPA1 protein levels. Stoke has now launched **OSPREY**, a Phase 1 clinical trial evaluating the therapy's safety and early effects on vision over 48 weeks.

Why It Matters

These advances mark an important step toward a potential treatment for ADOA. With each study, researchers are uncovering new ways to measure—and ultimately slow or reverse—the effects of this inherited optic nerve condition.

The progress shared at the Cure ADOA Foundation conference offers renewed hope for the ADOA community and the families working together to drive this research forward.

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* Dr. Steve Gross, MD, is a full-time employee of Stoke Therapeutics, Inc and holds an equity interest in the company. The information presented is for informational and educational purposes only. STK-002 has been granted orphan drug designation by the FDA as a potential new treatment for ADOA. A Phase 1 study (OSPREY) of STK-002 in people with ADOA is now underway to evaluate if STK-002 is safe, if it causes any side effects, and how the body processes the study drug.