ZIKA VIRUS LINKED TO MORE EYE PROBLEMS IN BABIES WITH MICROCEPHALY

Researchers studying babies with a Zika virus–related birth defect say they have found previously unreported eye problems possibly linked to the virus. In three Brazilian infants with microcephaly, the researchers observed retinal lesions, hemorrhaging, and abnormal blood vessel development not noted before in relation to the virus. The findings were published online in *Ophthalmology*.1

Zika virus is now known to cause microcephaly, a birth defect marked by smaller head and brain size.1 In Brazil, the site of the most serious outbreak, nearly 1.5 million people reportedly have the virus. Some 4,000 infants were recently born with microcephaly, according to reports.2 As a result, the World Health Organization declared a public health emergency in February, bringing added urgency to the need for more research. A prior study of 29 Brazilian babies with presumed congenital Zika infection showed that one-third had eye problems that included ocular lesions, optic nerve abnormalities, chorioretinal atrophy, and withering of the retina and choroid.3

For the new case series, researchers from Brazil and Stanford University examined the eyes of three infant boys from Northern Brazil born in late 2015 with microcephaly. All had mothers with suspected Zika virus infections during the first trimester of pregnancy. Among the findings, the researchers identified several types of ocular issues not previously observed in relation to the Zika virus. These included hemorrhagic retinopathy, abnormal vasculature in the retina, including signs of missing blood vessels in the retina where cells may have died; and torpedo maculopathy, identified by torpedo-shaped lesions in the macula. Although retinal lesions have been observed in prior articles on Zika-related ocular findings, the authors noted that this type of lesion has not been previously observed in cases of microcephaly.

The infants in this study also exhibited other ocular symptoms noted in the previous study. Specifically, all three babies in this case study showed signs of pigmentary maculopathy. Four eyes had symptoms of chorioretinal atrophy.

The study is small and observational. However, the findings add to a growing body of clinical information about how Zika may affect children’s eye development and vision. The authors noted that it remains unclear whether the viral infection itself causes eye abnormalities or if they are a consequence of Zika-induced microcephaly.

“To my knowledge, the eye problems we found have not been associated with Zika virus before,” said Darius Moshfeghi, MD, senior author of the study and a Professor of Ophthalmology at the Stanford University School of Medicine. “The next step is to differentiate what findings are related to the Zika virus itself versus microcephaly caused by the virus in order to better understand which infants will need screening.”


Carotenoids Improved Healthy Vision and Contrast Sensitivity

Supplemental carotenoids can improve already healthy vision, according to a study by the Macular Pigment Research Group at the Nutrition Research Centre Ireland, part of the School of Health Sciences at Waterford Institute of Technology. In the Central Retinal Enrichment Supplementation Trials (CREST), John M. Nolan, PhD, and colleagues investigated the potential benefits of lutein, zeaxanthin, and meso-zeaxanthin supplementation in individuals whose eyes lack sufficient concentrations of macular pigment (MP). Notably, this study focused on people with strong eyesight instead of those who needed corrective action, according to a MacuHealth news release.

CREST was a parallel, double-blind, placebo-controlled, block-randomized study that enrolled 105 patients. Over 12 months, 53 patients received a daily formula of naturally occurring carotenoids (10 g lutein, 10 g meso-zeaxanthin, 2 g zeaxanthin), and 52 patients received placebo. Observations were recorded at baseline and at 3, 6, and 12 months.

Researchers calculated changes in mean contrast...
sensitivity across various spatial frequencies, with 6 cycles per degree (cpd) as the primary outcome measure. The active group demonstrated a statistically significant improvement from baseline at both 6 cpd ($P=0.002$) and 1.2 cpd ($P=0.004$) compared with placebo. This improvement coincided with an observed increase in MP ($P=0.002$ at 6 cpd). No statistically significant relationships, however, were found between changes in lutein concentration and changes in contrast sensitivity at any recorded spatial frequency.

The authors concluded that supplementation of macular carotenoids (lutein, zeaxanthin, and meso-zeaxanthin) can increase MP and significantly enhance visual function and contrast sensitivity. This improvement may be particularly beneficial for reducing eye strain when reading as well as for improving the detection of moving and nonmoving objects when driving or playing sports, Dr. Nolan said in the press release.

**Raindrop Inlay Improves Near, Intermediate Vision**

A study published in *Investigative Ophthalmology and Visual Science* found that the structural changes induced by the corneal–shape-changing Raindrop Near Vision Inlay (ReVision Optics) significantly improved near and intermediate vision in patients with presbyopia, with no loss of distance binocular acuity.1

The study measured the anterior corneal surface and the thinning of the epithelium in 30 presbyopic patients 1 year after the inlay was placed. Study results indicated that the stroma predominately took on the curvature of the inlay. “This study further showed no adverse corneal conditions associated with epithelial thinning that can occur with other refractive procedures or corneal pathologies,” John Kilcoyne, ReVision Optics President and CEO, said in a news release. ReVision Optics sponsored the study.

**Tecnis Symfony, Tecnic Symfony Toric Receive FDA Approval**

The US FDA has approved the Tecnis Symfony and Tecnic Symfony Toric IOLs (Abbott Medical Optics), according to a company news release. The IOLs are the only ones available in the United States that provide a full range of continuous high-quality vision after cataract surgery and mitigate the effects of presbyopia.

The approval was based on the results of a US pivotal study that compared the Tecnis Symfony lens with a Tecnic aspheric monofocal lens in 298 patients. Compared with patients in the monofocal group, those who received the Tecnis Symfony IOL achieved greater improvements in intermediate and near vision and maintained similar distance vision. Patients in the Symfony group were also more likely to achieve reduced overall spectacle wear and high overall visual performance in any lighting condition. Rates of adverse events did not differ between the Symfony and monofocal groups, according to the news release.

The Symfony lens is approved in more than 50 countries.

**AcuFocus Appoints New President and Chief Operating Officer, Chairman of the Board**

AcuFocus appointed Alan Waterhouse President and Chief Operating Officer (COO), and William Link, PhD, Chairman of the Board. Mr. Waterhouse will also take a seat on the Board of Directors. Mr. Waterhouse and Dr. Link have replaced Jim Mazzo, who joined Carl Zeiss Meditec as Global President of Ophthalmology.

Mr. Waterhouse brings more than 21 years of health care experience to AcuFocus, having joined the company as COO in 2015. In past roles, Mr. Waterhouse has served as Vice President or President of Abbott Labs, Advanced Medical Optics, Cardinal Health (Pyxis Corporation/PCI Services), and the Asteres Corporation. Dr. Link is the Managing Director and Cofounder of Versant Ventures, an investment firm that provides financing for companies at all stages of development across the health care sector.

Mr. Mazzo was appointed Chairman of the Board in January 2013 and, later that year, was named Chairman and CEO. In his tenure, AcuFocus received FDA approval for the Kamra inlay and obtained the CE Mark for the IC-8 IOL.
Alcon Releases Online Toric IOL Calculator

Alcon has released an online toric IOL calculator designed to improve outcomes in astigmatism management by helping surgeons select the appropriate toric IOL model and power, according to a company news release.

The Alcon Online Toric IOL Calculator includes an optimized user interface and integrates the Barrett Toric Algorithm, which accounts for posterior corneal astigmatism, calculates patient-specific effective lens position, and is designed to improve preoperative refractive predictability by using a centroid value for surgically induced astigmatism.

The user interface has been designed to simplify planning and updated to be more intuitive. It includes calculations for the full line of AcrySof Toric IOL models (Alcon), full display of AcrySof Toric IOL models for customized planning, optimized design available in multiple languages, and easy-to-read printouts, the news release said.

The Alcon Toric IOL Calculator will be available globally in more than 20 languages.

Nicox to Transfer European and International Commercial Operations

Nicox will transfer its European and international commercial operations to a newly founded private company focused on the commercialization of a portfolio of ophthalmic products in Europe, according to a news release.

The new company is being structured by GHO Capital and will combine Nicox’s existing European and international commercial infrastructure and portfolio, including some products in late-stage development for Europe only. All rights to Nicox’s unencumbered research and development pipeline programs remain with Nicox.

This transaction is a key step in refocusing Nicox’s resources on its research and development pipeline, which includes AC-170 for allergic conjunctivitis, NCX 4251 for blepharitis, NCX 470 for IOP reduction in patients with glaucoma and ocular hypertension, and the new generation of nitric oxide standalone donors in glaucoma, the news release said. Nicox will continue to support Bausch + Lomb in advancing the nitric oxide-donating prostaglandin F2-α analog latanoprostene bunod.

Under the terms of the transaction, Nicox will be responsible for completing the development and regulatory approval in Europe of product candidates transferred to the new company. Nicox is eligible to receive reimbursement of some costs upon achievement of regulatory and commercial milestones associated with these product candidates.

— Compiled by Steve Daily, Executive Editor, News; and Callan Navitsky, Senior Editor