

Retinopathy of prematurity: New developments are cause for hope

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A mini-symposium published in the *Journal of the American Association for Pediatric Ophthalmology and Strabismus (AAPOS)* provides important insights into new techniques and treatments that show promise for eliminating retinopathy of prematurity (ROP) throughout the world.

ROP is an eye disorder that potentially results in blindness primarily affecting [premature infants](#). This disorder, which usually develops in both eyes, is one of the most common causes of visual loss in childhood and can lead to lifelong vision impairment and blindness. ROP occurs when abnormal blood vessels grow and spread through the retina, potentially leading to retinal detachment and blindness. A revolution in the diagnosis, management, and prevention of ROP has begun contributing to improving the lives of patients suffering from this devastating condition.

In Western countries, more than 90% of premature infants even with severe ROP can expect a favorable outcome, while under-resourced areas lack trained staffing, functional equipment, and even a rudimentary understanding of ROP in its myriad forms. Without less expensive and more accessible treatments, ROP will continue to condemn too many infants to a life of severe visual impairment or blindness.

One proposed solution is the use of telemedicine in areas in which trained examiners are not available. Dr. Michael F. Chiang, MD, of the Departments of Ophthalmology & Medical Informatics and Clinical Epidemiology, Casey Eye Institute, Oregon Health & Science University, Portland, OR, notes that recent developments in wide-angle retinal imaging, computing, and information technology have facilitated the implementation of major real-world ROP telemedicine programs in the United States and throughout the world.

According to Dr. Chiang, "The nature of ROP care

is now being gradually transformed by some of these technologies. By evaluating other emerging imaging technologies, understanding their benefits and limitations, and gradually implementing them into practice when warranted, pediatric ophthalmologists will be able to enhance the care they provide to patients for a broader range of problems in the future."

ROP is traditionally treated using laser ablation of the [abnormal blood vessels](#), but advancements have been made using vascular endothelial growth factor (VEGF) inhibitors. Helen A. Mintz-Hittner, MD, Department of Ophthalmology and Visual Science, University of Texas Health Science Center-Houston, McGovern Medical School, Houston, TX, shares her unique, sometimes controversial work on bevacizumab that has swept the country and changed the way many physicians treat advanced ROP. The treatment shows promise, however, delayed recurrence of ROP after bevacizumab treatments does occur (usually 5-10%). Dr. Mintz-Hittner emphasizes "the need for proper case selection (timing), careful injection (technique), and appropriate long-term follow-up (at least 65 weeks adjusted age) for parameters (outcomes)" to properly manage an ROP infant.

David K. Wallace, MD, MPH, of the Departments of Ophthalmology and Pediatrics, Duke University School of Medicine, Durham, NC, contributes a balanced review of several anti-VEGF drugs. He cautions, "we have a long way to go to have an evidence-based paradigm for anti-VEGF treatment. There are many unanswered questions about which drug, what dose, relative benefits, and possible side effects. Consequently, there are many opportunities for high-quality comparative studies that will shape our future treatment of premature infants and aid in reducing the burden of blindness from ROP."

"We are fortunate to have a community of scientists devoted to working on a leading cause of blindness

in children," commented Journal of AAPOS Editor-in-Chief William V. Good, MD, The Smith-Kettlewell Eye Research Institute, San Francisco, CA. "Look how far we have come, thanks to the hard work of so many. It's time to consider the real possibility that this condition can be eliminated. When that happens, we will have achieved nothing short of a miracle."

More information: Michael F. Chiang. Retinopathy of Prematurity, *Journal of American Association for Pediatric Ophthalmology and Strabismus* (2016). DOI: [10.1016/j.jaapos.2016.10.001](https://doi.org/10.1016/j.jaapos.2016.10.001)

Helen A. Mintz-Hittner. Retinopathy of Prematurity, *Journal of American Association for Pediatric Ophthalmology and Strabismus* (2016). DOI: [10.1016/j.jaapos.2016.10.002](https://doi.org/10.1016/j.jaapos.2016.10.002)

David K. Wallace. Retinopathy of Prematurity, *Journal of American Association for Pediatric Ophthalmology and Strabismus* (2016). DOI: [10.1016/j.jaapos.2016.08.013](https://doi.org/10.1016/j.jaapos.2016.08.013)

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