

Cancer Drug Better Than Laser Surgery For Baby Blindness

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Bevacizumab is becoming quite popular these days. Aside from treating ovarian cancer, it has been published this week that it also benefits premature infants suffering from blindness or retinopathy of prematurity and is less of a risk than laser surgery.

Retinopathy of prematurity (ROP) is abnormal blood vessel development in the retina of the eye in a premature infant. The blood vessels of the retina begin to develop three months after conception and complete their development at the time of normal birth. If an infant is born very prematurely, eye development can be disrupted. The vessels may stop growing or grow abnormally from the retina into the normally clear gel that fills the back of the eye. The vessels are fragile and can leak, causing bleeding in the eye. Retinopathy of prematurity is a leading cause of childhood blindness worldwide.

Bevacizumab is currently approved by the U.S. Food and Drug Administration (FDA) for cancers that are metastatic (have spread to other parts of the body). It received its first approval in 2004 for combination use with standard chemotherapy for metastatic colon cancer and non-small cell lung cancer. In 2008, it was approved by the FDA for use in metastatic breast cancer, a decision that generated some controversy as it went against the recommendation of its advisory panel, who objected because it only slowed tumor growth but failed to extend survival.

In this most recent study, Helen A. Mintz-Hittner, M.D., the Alfred W. Lasher, III, Professor in the Department of Ophthalmology and Visual Science at the UTHealth Medical School, and colleagues compared the use of intravitreal bevacizumab, an anti-vascular endothelial growth factor, to conventional laser treatment.

Data on the outcomes of 143 infants enrolled in the study showed that, among infants with zone I disease, the recurrence rate was 6% with intravitreal bevacizumab and 42% with conventional laser therapy. The drug therapy resulted in mild anatomical retinal abnormality in just one eye of 31 infants, whereas conventional laser treatment resulted in a mild structural abnormality in 16 eyes and severe abnormality in two eyes of 33 infants.

Mintz-Hittner states:

"When I started working with babies almost 40 years ago, there was nothing we could do for those with retinopathy of prematurity. We've gone from nothing to a real solution. It you are careful and administer this therapy appropriately in stage 3+, you can get wonderful outcomes."

She continues:

"Our first available treatment for babies with retinopathy of prematurity was cryotherapy. It was very painful and it wiped out all posterior ocular layers. The visual field was decreased and myopia or nearsightedness occurred. It was a long procedure, 2 to 3 hours, requiring intubation. With laser treatment, you still had to intubate, which could cause major setbacks for the baby, and field loss and myopia still occurred, but it was less painful and only destroyed the inner retinal layers. With this drug therapy, we use a few drops of anesthetic to numb the eye. We take a syringe with a tiny needle and administer a small amount of the drug directly into the eye. The whole process takes two to three minutes, and you begin to see results within 24 hours. The abnormal vessels virtually disappear and then normal vessels begin to grow out again. The field of vision is preserved and myopia is less."

The results of the study were so promising that Children's Memorial Hermann Hospital has discontinued the use of conventional laser therapy and now offers only the drug therapy to premature

infants with this type of retinal disease.

James D. Reynolds, M.D. at the Department of Ophthalmology at the University of Buffalo in New York, followed up with this comment:

"As compared with conventional laser therapy in treating patients with zone I retinopathy of prematurity, intravitreal bevacizumab represents a true breakthrough in disease management. Intravitreal bevacizumab should become the treatment of choice for zone I retinopathy of prematurity. You must follow the child for at least 16 weeks following the injection to make sure there isn't a recurrence. Approximately 4 percent of patients (one in every 25 patients) may require a second injection. I explain to parents that it's like a cancer. It can come back and if it isn't treated in time, it can lead to blindness, so follow up is very important."

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