

# Anti-growth factor drugs raise hope and concern for treatment of children's eye diseases

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A new class of antibody drugs may provide a powerful new tool for the treatment of eye diseases in children, but specialists need to be alert for the possibility of serious side effects, according to an editorial in the August *Journal of AAPOS* (American Association for Pediatric Ophthalmology and Strabismus), published by Elsevier.

Dr. Robert L. Avery of Santa Barbara, Calif., discusses issues related to the use of [antibodies](#) against vascular endothelial growth factor (VEGF) in pediatric ophthalmology. The two anti-VEGF antibodies available so far—bevacizumab and ranibizumab—have been rapidly adopted for the treatment of age-related [macular degeneration](#) (AMD), the leading cause of vision loss in older adults. The antibodies work by blocking the development of new blood vessels (angiogenesis).

Anti-VEGF antibodies were originally approved for use in cancer treatment, and there have been some safety concerns, including a possible increase in stroke risk. However, at the much smaller doses used in eye diseases, the two antibodies appear to be safe. However, in discussing the growing use of anti-VEGF antibodies in children, Dr. Avery sounds a cautious note. One study, also published in the August *Journal of AAPOS*, found that bevacizumab treatment in one eye of a child with eye disease also improved the condition in the other eye. This, along with other limited reports, suggests that the antibodies might leave the eye and enter the bloodstream, where they could potentially lead to

side effects and complications.

Side effects are a special concern in children, who might be at higher risk because of their smaller size. Used in [premature infants](#) with an [eye disease](#) called retinopathy of prematurity, anti-VEGF antibodies could have the potential for harm to still developing organs.

These issues are particularly difficult because the anti-VEGF antibodies are not approved for use in children. Because of the urgent need for treatment of serious but relatively rare eye diseases in children, "off-label" use of drugs—for purposes other than those which the drugs are approved—is common in pediatric ophthalmology.

A study is being performed to compare the two anti-VEGF antibodies in adults with AMD. Because ranibizumab stays in the body for a shorter time than bevacizumab, it might be a better choice for use in treating eye diseases. However, the upcoming study may not be large enough to detect small differences in side effects, and in any case the results may not be applicable to [children](#).

Meanwhile, Dr. Avery urges pediatric ophthalmologists using anti-VEGF antibodies to watch carefully for any possible side effects in their young patients. "[Bevacizumab](#) and ranibizumab have provided us with a great opportunity to improve the treatment of a variety of retinal diseases," he concludes. "Hopefully, the dramatic improvements in outcomes we have seen in adults will extend into pediatric diseases, but further study is clearly needed to assess the safety and efficacy of these drugs in this population."

Source: Elsevier

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