

# Medication slows progression of myopia in children

August 26 2008

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Daily treatment with a medication called pirenzepine can slow the rate of progressive myopia, or nearsightedness, in children, reports a study in the August issue of the *Journal of AAPOS (American Association for Pediatric Ophthalmology and Strabismus)*.

Led by Dr. R. Michael Stiatkowski of Dean McGee Eye Institute/University of Oklahoma Department of Ophthalmology, the researchers evaluated the effects of pirenzepine in children with myopia. Myopia—sometimes called nearsightedness—is a condition in which focus on near objects is good, but distant objects appear blurry. Caused by a problem with the length of the eyeball or the curvature of the cornea, myopia gets worse over time in many children.

In the study, children with myopia were randomly assigned to treatment with pirenzepine gel or an inactive placebo gel. After a year of treatment, the average increase in myopia was significantly less for children using pirenzepine. The new study presents the final results in 84 patients who continued treatment for a total of two years: 53 with pirenzepine and 31 with placebo.

Although myopia worsened in both groups of children, the rate of progression was slower with pirenzepine. At the end of two years, myopia increased by an average of 0.58 diopters in children using pirenzepine versus 0.99 diopters with placebo. (All children initially had "moderate" myopia, with an average refractive error of about -2.00 diopters.)

New glasses are generally prescribed when myopia worsens by at least 0.75 diopters. During the study, 37 percent of children using pirenzepine met this cut-off point compared with 68 percent of the placebo group. With glasses, all children had about 20/20 vision at both the beginning and end of the study.

Pirenzepine treatment was generally safe, although eleven percent of children stopped using it because of side effects such as eye irritation. The drug also caused mild dilation of the pupils. The amount of change in the length of the eyeball was not significantly different between groups, although more research is needed to determine whether pirenzepine affects the growth of the eyes.

Myopia is the leading cause of loss of vision worldwide, affecting at least 25 percent of U.S. adults. Effective treatments to prevent or delay progressive myopia may reduce the risk of serious complications such as detached retina and glaucoma—even for children with moderate myopia, the risk of retinal detachment is increased by up to four times.

Treatments to slow worsening myopia could also have important quality-of-life benefits. For example, while children with -1.00 diopter of myopia may need glasses only part-time, those with -2.00 diopters will probably need glasses for all activities, including school and sports.

Previous studies have suggested that a drug called atropine can delay progression of myopia. The new results show that pirenzepine—a related drug with fewer side effects—is also safe and effective for this purpose.

More research will be needed before pirenzepine can be widely recommended for children with myopia. Key questions include the long-term effects and optimal length of pirenzepine treatment. In addition, more convenient and practical methods of drug administration may help to overcome some of the disadvantages of pirenzepine gel.

Source: Elsevier

Citation: Medication slows progression of myopia in children (2008, August 26) retrieved 19 April 2024 from <https://medicalxpress.com/news/2008-08-medication-myopia-children.html>

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