

Treatment of Myopia – Current Status and Recent Advances

An Expert Interview with Andrzej Grzybowski

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Keywords

Myopia, atropine, pirenzepine, fluid misdirection syndrome, EURETINA

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The incidence of myopia is increasing and represents a major global economic and social burden.¹ In addition to its disadvantages in terms of vision, myopia increases the risk of myopic macular degeneration, retinal detachment, glaucoma and cataract and is a leading cause of visual impairment and blindness worldwide.² Pharmacological, environmental and optical interventions have been used to try to slow the progress of myopia. While spectacles and contact lenses have a long history in controlling accommodative responses, they do not slow progression. In an expert interview conducted at EURETINA 2017, Andrzej Grzybowski of the Institute for Research in Ophthalmology, Poznan, Poland discusses the current status of myopia and its treatment, as well as discussing new technologies aimed at delaying progression of the condition.

Q: Why has the prevalence of myopia increased so much in recent years?

The modern rise in myopia mirrors a trend for children in many countries spending more time engaged in reading, studying or glued to computers and smartphone screens. The evidence suggests that these environmental factors changes play a significant role, particularly in East and Southeast Asia. In some places, children cannot get enough outdoor light: there are too few hours of daylight, the sun is too fierce or the cold too intense.^{3,4}

Q: What have been the most important advances in non-surgical treatment for myopia in the last year?

High-dose atropine (1% and 0.5%), moderate-dose atropine (0.1%) and low-dose atropine (0.01%) showed clear effects in myopia control (all with statistically significant effect).⁵⁻⁷ With that the preliminary results of ongoing studies regarding the efficacy of pirenzepine, increased light exposure (e.g., using the Kurango study lamp) and 7-methylxanthine are promising.⁸

Q: What are the benefits and limitations of the use of atropine eye drops for the treatment of myopia?

High-dose atropine was proved to be superior to other interventions. The side-effects might include temporary stinging, blurred vision, pupil dilation and eye irritation, limiting a long-term application.⁹ This leaves low-dose atropine, pirenzepine and soft contact lenses with myopia control features

(for example, peripheral defocus modifying designs) as viable options for the active management of myopia progression.¹⁰⁻¹²

Q: What is your opinion on the use of toric orthokeratology for the treatment of myopia?

The use of orthokeratology is limited by its complexity and cost. However, this treatment showed moderate effects for myopia control in several studies.^{13,14}

Q: Which presentations would you highlight from this year's EURETINA meeting?

My highlight was the presentation regarding the fluid misdirection syndrome. In a recent review article we proposed a unified definition of this syndrome, known for almost 150 years as malignant glaucoma.¹⁵ It might occur intraoperatively, however very few papers have been published on the topic. Anecdotally, most anterior segment surgeons report to have experienced such cases. □

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