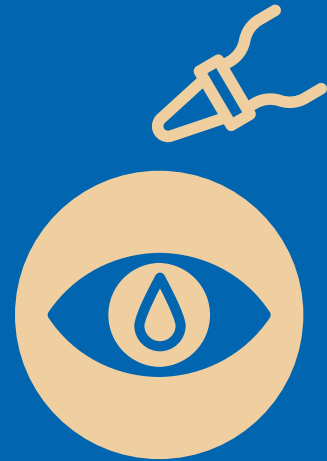


Consensus: Combination Treatment for Myopia Management



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Introduction

This HOYA advisory meeting is designed to share experts' opinions on myopia management based on their clinical experience and provide the consensus on when and how to use combination treatments with atropine and optical interventions for myopia management in children.

Advisory Meeting set-up

Five well-known experts in pediatric ophthalmology from Asia and Europe with specific knowledge related to pediatric myopia and experiences with combination treatments were selected. For this specific advisory meeting combination treatment for myopia management was defined as a combination of optical and a pharmaceutical treatment, not a combination of two different optical options.

Prior the meeting, independent literature review, relevant studies and questions on the topic were shared with the participating experts.*

Regional insights

In many countries atropine prescription is in the hands of ophthalmologists and the distribution of optical intervention is done by optometrists or opticians. Therefore, close cooperation between these professions is required for providing better care to the child. In contrast to previous years where atropine was prescribed as a first line treatment by ophthalmologists, nowadays eye care professionals start prescribing MiYOSMART spectacle lenses more often as initial treatment. However, if myopia progresses, then the ophthalmologists look for possible combination treatment MiYOSMART spectacle lens with atropine.

Currently, in Asia different dosages of 0.01% to 0.5% of atropine are prescribed to the children. The prescribed dosage level depends on the country, the individual prescriber approaches, and in some countries related

to the reimbursement by health insurances. For example, in Taiwan only dosages of 0.125% and higher are covered by health insurances and are therefore much more prescribed compared to lower doses atropine. The experts suggest that an accommodative support design on MiYOSMART spectacle lenses would be a beneficial treatment option if child is under high atropine dose or have accommodative binocular vision issues.

In many European countries, atropine is not reimbursed by health insurances and the most common dosage is still 0.01%, but the ophthalmological societies now tend to recommend the higher dosage of 0.02% to 0.05%.

Initiation, follow-up, and measurements

Experts in previous virtual HOYA advisory meeting about treatment initiation agreed that cycloplegic refraction, axial eye length, ocular health, and binocular vision assessment should be performed before initiating the first treatment and during follow-ups, regardless of which treatment option is chosen.^{1,2} The experts in this meeting recommend a vision check within 2 weeks after initiating a new treatment strategy and a more detailed examination if any abnormalities are detected.

The experts suggest an additional follow-up visit during the first month to monitor visual functions in patients who receive atropine treatment with dosage greater than 0.05%. Afterwards, all patients are suggested to be followed-up every 6-to-12-months.

Full correction under cycloplegic refraction should be prescribed in all myopia management treatment methods. Axial length measurement is recommended, but depending on local country regulation, the cost of measurement to patients and the availability of such instruments limits this advice^{1,3}. Experts recommend assessing accommodation while using atropine.^{1,4}

With anisometropia > 1.50D, the experts recommend using CL options instead of spectacles to relieve

aniseikonia symptoms.

Dose dependent effects and combination treatment

From atropine studies

In the LAMP study in Chinese children, in which dosages of 0.01%, 0.025%, and 0.05% were studied over a three-year period, a dose-dependent myopia control effect was observed. The higher the dosage, the better the myopia control. While the side effects with 0.05% dosage is well tolerated in Asian children, the same is not reported in Caucasian children who have light colored eyes and received the highest dosage of 0.05%.^{3,4}

Risk profile dependent

The experts assess the child's risk profile, discuss parental concerns and initiate the appropriate treatment procedure. When initiating myopia management treatment in older children with less risks of high myopia, the experts recommend starting with optical options only. If the child is young and has high risk profile with myopia progression of $>-0.50D$ in the previous six months, then combination treatment can be initiated immediately. The experts usually adapt the dosage individually depending on myopia control and side effects.

In combination with MiYOSMART

The experts see no significant changes in visual acuity or binocular vision between MiYOSMART spectacle lens alone or in combination with low dosage atropine. Contrast sensitivity was measured with MiYOSMART spectacle lens alone and in combination with Atropine 0.01%, no difference was found.⁵ If the expected treatment goal is not achieved only with MiYOSMART spectacle lens, the experts noted a

better control effect in combination treatment.

Treatment goal achievement

The goal of treatment is different between Asian and Caucasian children. Success in Asian children is considered to be an annual progression of refraction less than $-0.80D$. In Caucasian children, European advisors recommend a threshold of $-0.50D$ or less progression per year. The idea of using emmetropic/physiological eye growth as a target for axial length progression has been described in several papers but is not yet widely established. Annual axial emmetropic progression is also related to ethnicity but is even more age dependent. The International Myopia Institute generally considers progression of 0.10 mm as normal eye growth.² A progression of more than 0.20 mm per year indicates a nonachievement of the treatment goal.

Conclusion

It is important when monitoring and evaluating myopia progression and axial length growth that the eye care professional compares it to the treatment goal and decide individually to stay in mono treatment or start with low dose atropine in combination.

If the expected treatment goal is not achieved only with MiYOSMART spectacle lens, the experts noted a better control effect in combination treatment.

In case of usage of high dose atropine with accommodative insufficiency, the experts recommend using accommodative support spectacle lens designs.

* The opinions expressed in this consensus and by the experts Advisory Meetings are the current opinions of the individual experts and cited reference sources and do not reflect the opinions of HOYA. The opinions are presented for informational purposes only and are not intended as medical advice, diagnosis, or choice of treatment. Patients should always consult their Eye Care Professionals for diagnosis and treatment decisions.

References

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