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Editorial

Atropine Eye Drops in Myopia

Isha Chaturvedi*

Assistant Professor, Department of Ophthalmology, TS Mishra Medical College and Hospital, India

***Corresponding Author:** Isha Chaturvedi, Assistant Professor, Department of Ophthalmology, TS Mishra Medical College and Hospital, India.

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Myopia or short sightedness, known to be a seemingly manageable visual problem, has become a pandemic in the last two decades and more so in the COVID and post-COVID era. According to current research, 50% of the world's population will be myopic by year 2050, of which 10% will be contributed by high myopia [1].

Being unable to see or read clearly affects the quality of life at the individual level, and is a socio-economic burden at the societal level. This is particularly true for high myopia and pathological myopia, which is associated with potentially blinding complications like cataract, glaucoma, maculopathy, retinal degenerations, posterior staphyloma, retinal detachment, choroidal neovascularization, and so on [2].

As a result, several medical and non-medical measures are being tried and tested by healthcare professionals to halt or slow down myopia progression. In this vast armamentarium, there is one drug found to be consistently effective, that is, atropine [3,4]. Various concentrations of atropine eye drops (e.g., 0.01, 0.025, 0.05, and 0.1%), many of which are commercially available, have been tested with varying efficacy.

The famous ATOM2 study established 0.01% atropine as the safest and most effective dose for restricting myopia [5]. The most commonly reported side effects with low dose atropine drops used in myopia control, include glare, reduced contrast and blurry vision for near. These are due to higher order aberrations and scattered light as a result of pupillary dilatation. These side effects are negligible with 0.01% atropine eyedrops.

The reduction in accommodation amplitude and pupillary dilation with 0.01% atropine was not found clinically significant as reported in the LAMP study (trials using 0.05, 0.025, and 0.01%) [6].

Therefore, the author advocates the use of 0.01% atropine eye drops for the control of myopia progression in children for at least 2 years initially, with followup every 3 months with cycloplegic refraction. It can be conveniently administered as a nighttime single daily dose. It is to be emphasised to the parents that the required myopic correction should be worn at all times. Bifocal glasses and tinted glasses (while outdoors) may be used for near blurring and photophobia respectively.

If the myopia continues to progress by 0.5 D or more after 6 months of regular use, one may switch to a higher dose (0.05%) of atropine, but after having explained the side effects.

In conclusion, low dose (0.01%) atropine is recommended as the initial treatment for myopia and there is a need to motivate children and parents for the same. At the same time, we, as health care workers should actively sensitise the community about the consequences of high myopia and the importance of regular eye checkups with cycloplegic refraction. Other factors such as increased outdoor activity and reduced screen time are also to be emphasised as they help in holistic development of the child.

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