Atropine for the Treatment of Childhood Myopia: ATOM1 (2006)

THE LENS

Objective

To assess if atropine eye drops are effective in slowing myopia progression and axial elongation

Methods

Design: RCT

Sample Size: N = 346

- 6-12 year old children with refractive error between -1.00D and -6.00D, and astigmatism less than -1.50D

Treatment Groups:

- Treatment: 1 drop of 1% atropine every night
- Control: 1 drop of vehicle eye drop every night

Outcome Measures:

- Change in spherical equivalent refraction and axial length at two years

Results

Point 1: Atropine slows myopia progression

- Atropine eye drop group showed a 77% reduction in myopia progression compared to the control group at two years
  - Mean progression of myopia was 1.20 +/- 0.69D in placebo group vs 0.28 +/- 0.92 D in atropine group ($P < 0.001$)

Point 2: Atropine slows axial elongation

- Atropine group demonstrated -0.02 +/- 0.35 mm axial elongation vs placebo group had 0.38 +/- 0.38 mm axial elongation ($P < 0.001$)

Point 3: No serious adverse effects of atropine

- Most common side effects were discomfort/hypersensitivity reaction (4.5%), glare (1.5%), and blurred near vision (1%)

TLDR: 1% Atropine eye drops nightly slows myopia progression and axial elongation safely. This study is limited by its relatively short time course (2 years)

Chua WH, Balakrishnan V, Chan YH. Atropine for the treatment of childhood myopia. *Ophthalmology*. 2006;113:2285–2291.