Vision-related quality of life in myopic children using combination treatment with atropine and Defocus Incorporated Multiple Segments (DIMS) spectacle lenses: 12-month results.

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Background/Purpose

The World Health Organization defines Quality of Life as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns.[1]

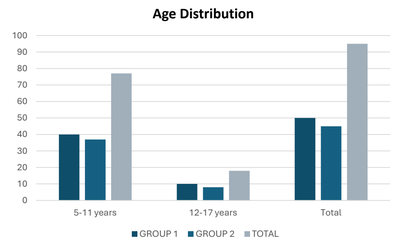
Purpose:
- To evaluate vision-related quality of life (VR-QoL) in myopic children undergoing myopia control treatment.
- To compare VR-QoL in myopic children undergoing myopia control treatment with atropine eye drops to children treated with combination treatment of atropine eye drops and Defocus Incorporated Multiple Segments (DIMS) spectacle lenses.
- To compare the results obtained from the two tests used to measure quality of life in both groups: the PedEyeQ and the CVFQ.

Methods

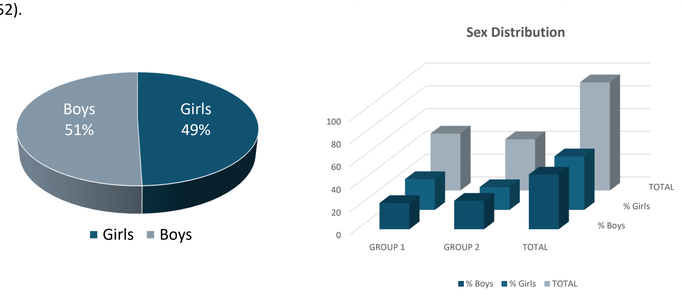
- Prospective longitudinal study.
- 95 myopic children aged 4 to 16 years undergoing myopia control treatment were included.
- Myopia ranged from -1.00 to -6.00 dioptres, astigmatism < -2.00 dioptres.
- Children were randomly allocated to two groups:
  - Group 1: children treated with 0.025% atropine eye drops and single-vision spectacle lenses.
  - Group 2: children treated with combination treatment with 0.025% atropine eye drops and DIMS spectacle lenses.
- Demographic and clinical data were collected.
- VR-QoL was assessed using the Children´s Visual Function Questionnaire (CVFQ) and the Paediatric Eye Questionnaire (PedEyeQ), administered before initiating treatment and after 12 months of treatment[2,3].
- Statistical (t-test) were performed.

Results

95 patients were included (mean age 9.62 ± 2.58y): 50 children in group 1 (40 between age 5-11y and 10 between 12-17y) and 45 children in group 2 (37 between age 5-11y and 8 between 12-17y).



50.5% of patients were male and 49.5% were female. The gender distribution was homogeneous in both groups (p=0.352).



Acknowledgments / Disclosures

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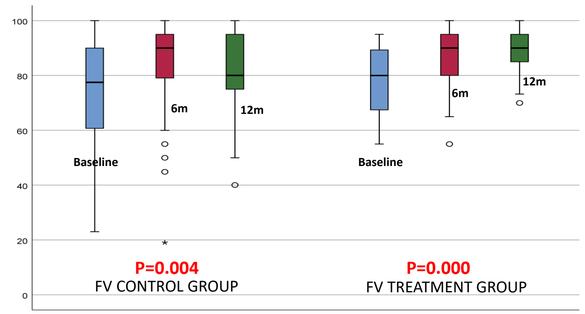
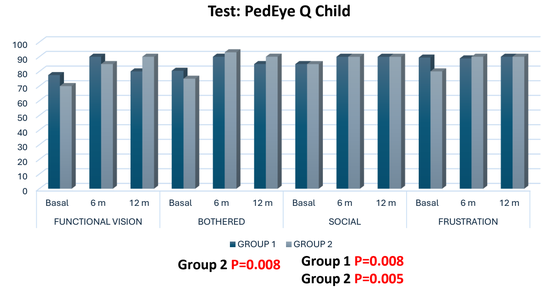
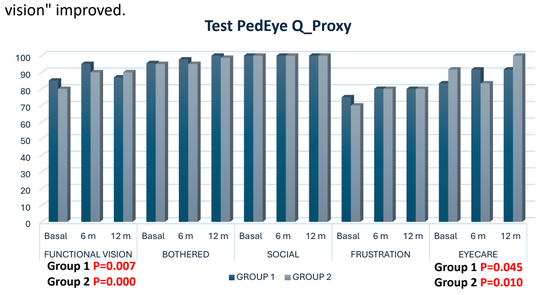
Regarding the Child-PedEyeQ test, the baseline score for the functional vision item was 77.48 and 70 in groups 1 and 2 respectively, with a significant improvement in 12-month results (group 1: 80.01 and group 2: 90) in both groups (p=0.004 in group 1 and p=0.000 in group 2). There were no differences in the outcomes of the two groups between 6 and 12 months.



For the social valuation item, statistically significant differences were also obtained in both groups in 12-month examination with respect to baseline (Baseline Group 1: 84.98 and 12 months: 89.98 (p=0.008) and Baseline Group 2: 84.97 and 12 months: 89.98 (p=0.005)). In the bothered valuation item, statistically significant differences were found between the baseline examination and the 12 months only in the treatment group, with the score improving in this group.

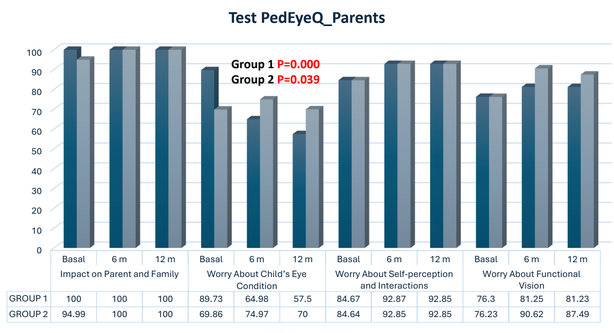


In the Proxy-PedEyeQ test, parents' perception of their child's "functional vision" also showed significant differences between the two groups from the start of treatment to the 12-month evaluation (Baseline Group 1: 81.53 and 12 months: 86.90 (p=0.007) and Baseline Group 2: 79.99 and 12 months: 90 (p=0.000)). In both cases, "functional vision" improved.



In the eyecare item, scores at 12 months after the start of treatment also improved in both groups (Baseline Group 1: 84.38 and 12 months: 91,67 (p=0.045) and Baseline Group 2: 83.33 and 12 months: 100 (p=0.01)).

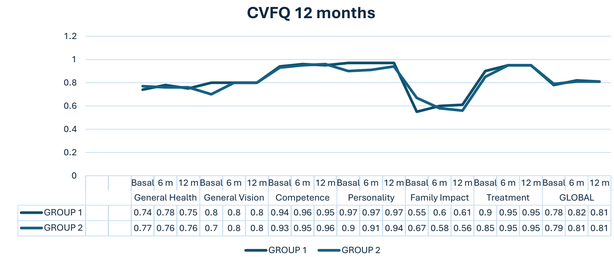
Concern about the condition of children's eyes was significantly different at the 12-month examination compared to the baseline examination in both treatment groups. This change occurred during the first 6 months, remaining unchanged for the remainder of the follow-up.



	Basal	6 m	12 m	Basal	6 m	12 m	Basal	6 m	12 m	Basal	6 m	12 m
	Impact on Parent and Family			Worry About Child's Eye Condition			Worry About Self-perception and Interactions			Worry About Functional Vision		
GROUP 1	100	100	100	89.73	64.98	57.5	84.67	92.87	92.85	76.3	81.25	81.23
GROUP 2	94.99	100	100	69.86	74.97	70	84.64	92.85	92.85	76.23	90.62	87.49

When comparing the two treatment groups with each other, no differences were found in any of the items of the PedEyeQ test at 12 months of treatment.

The CVFQ questionnaire demonstrated that the items of general vision (p=0.027), competence (p=0.045) and family impact (p=0.033) showed better results in group 2 but no significant differences in VR-QoL were found between the two groups using CVFQ.



	Basal	6 m	12 m	Basal	6 m	12 m	Basal	6 m	12 m	Basal	6 m	12 m	Basal	6 m	12 m	Basal	6 m	12 m
	General Health			General Vision			Competence			Personality			Family Impact			Treatment			GLOBAL		
GROUP 1	0.74	0.78	0.75	0.8	0.8	0.8	0.94	0.96	0.95	0.97	0.97	0.97	0.55	0.6	0.61	0.9	0.95	0.95	0.78	0.82	0.81
GROUP 2	0.77	0.76	0.76	0.7	0.8	0.8	0.93	0.95	0.96	0.9	0.91	0.94	0.67	0.58	0.56	0.85	0.95	0.95	0.79	0.81	0.81

Conclusions

No significant differences were observed in the quality of life of patients treated with atropine eye drops compared to those who received combined treatment of atropine eye drops and DIMS spectacle lenses.

In the group of patients using combination treatment, an increase in visual function was observed, suggestive of a possible additive effect on VR-QoL of DIMS spectacle lenses in myopic children using pharmacological treatment for myopia control.

Changes observed in the Quality of Life have been observed in the first 6 months of treatment.

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