Vision-related quality of life of myopic children using combination treatment: Atropine and Defocus-Incorporated Multiple Segments (DIMS) Spectacle lenses

Noemi Guemes Villahoz[1,2], Elena Hernandez-Garcia[1], C Nunila Gomez-de-Liano[2], Paloma Porras-Angel[2], Rafael Bella-Gala[2], Paula Talavero-Gonzalez[1], Alicia Ruiz-Pomeda[2], Beatriz Martin-Garcia[2],Rakhee Shah[3], Julian Garcia Feijoo[1,2], Rosario Gomez-de-Liano[1,2]

[1]Hospital Clinico San Carlos, Biomedical Research Foundation of Hospital Clínico San Carlos(IDISCC), Ophthalmology, Madrid, Spain, [2]Complutense University of Madrid, Optics and Optometry, Madrid, Spain, [3]Centre of Applied Vision Research, Optometry & Visual Sciences, City, University of London. HOYA Vision Care, Amsterdam, The Netherlands, Netherlands

noemiguemes@gmail.com

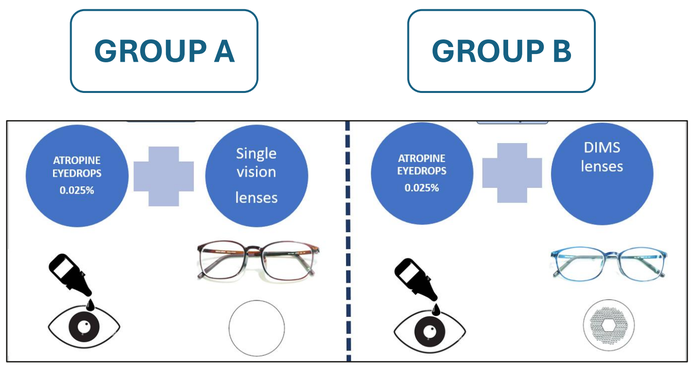
Background

Myopia management may influence current and perceived vision-related quality of life (VR-QoL). Previous reports have shown the efficacy of Defocused Incorporated Multiple Segment spectacle lenses (DIMS), and atropine eye drops in controlling myopia progression, both separately and in combination. It is therefore essential to assess the impact of these interventions on VR-QoL in children.

Purpose: To assess vision-related quality of life (VR-QoL) in children undergoing myopia control treatment with atropine compared to children treated with combination treatment of atropine and Defocus Incorporated Multiple Segments (DIMS) spectacle lenses.

Method

Randomised controlled (RCT) that included myopic children aged 4 to 16 years undergoing myopia control treatment. Random allocation in group A and B.



Method

Demographic and clinical data, including cycloplegic spherical equivalent refraction (SER) and axial length (AL), were noted. VR-QoL was assessed using the Children's Visual Function questionnaire (CVFQ) and the Pediatrics Eye Questionnaire (PedEyeQ) before initiating and after 6 months of treatment. Statistical analyses (Mann-Whitney U-test or t-test) were performed.

Pediatric Eye Questionnaire (PedEyeQ)
3 parts: Child, Proxy/Caregiver, and Parent
4-5 Domains (table)
Rasch analysis
Scores: 0-100

Children's Visual Function questionnaire (CVFQ)
Parents or legal guardian
6 subscales: General Health, General Vision, Competence, Personality, Family Impact, and Treatment (scores: 0-1)

Results

95 patients were included: 50 children in group A, mean age 8.94 ±2.50 years and 45 children in group B, mean age 9.51 ±2.46 years (p=0.266).

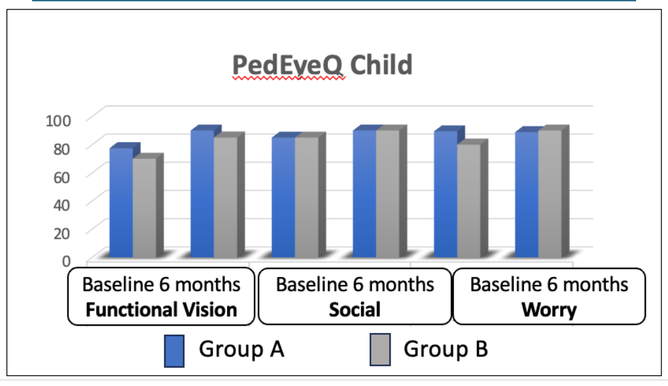
PedEyeQ Results

No significant differences were found in the overall VR-QoL between both groups with PedEyeQ.

Functional Vision and Social item scores (PedEyeQ) significantly improved at the 6M follow-up in group A (p=0.03 and p=0.016, respectively) and group B (all p=0.01).

Results

PedEyeQ Test_Child Baseline – 6 months		
Items	**Group**	**p**
Functional Vision	GA	0.03
	GB	0.01
Social	GA	0.016
	GB	0.01
Worry	GA	0.684
	GB	0.113

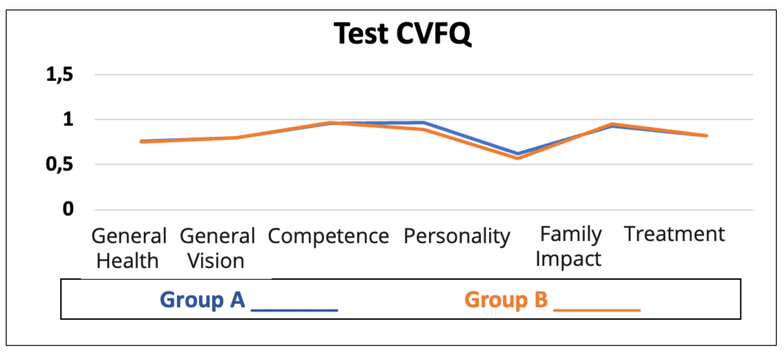


CVFQ Results

No significant differences in VR-QoL were found between the two groups in all 6 CVFQ subscales (general health, general vision, competence, personality, family impact, and treatment), all p>0.05.

Group A: No differences were found between baseline scores and 6-month scores (all p>0.05).

Group B: Children Group B showed an improvement in General Vision (p=0.049) and Competence (p=0.031) scores.



Conclusions

- Vision-related quality of life is an essential aspect when considering different interventions for myopia management.
- Myopic children treated with atropine eye drops and those using combination treatment (atropine and DIMS) do not seem to have significant differences in overall VR-QoL following 6 months of treatment. General Vision (CVFQ), Competence (CVFQ) and Eye Condition (PedEyeQ) scores improve significantly for children on combination treatment.
- Combined treatment with atropine eyedrops and DIMS spectacle lenses is a potential myopia control intervention that does not appear to significantly affect VR-QoL in myopic children

References

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