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Vision-related quality of life of myopic children using combination treatment: atropine and defocus-incorporated multiple segment spectacle lenses

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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.

Methods: Longitudinal study that included myopic children aged 4 to 16 years undergoing myopia control treatment. Group A included children on 0.025% atropine eyedrops and single-vision lenses, and group B included children on combined treatment of 0.025% atropine and DIMS lenses. 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 Pediatric Eye Questionnaire (PedEyeQ) before initiating and after 6 months of treatment. Statistical analyses (Mann-Whitney U-test or t-test) were performed.

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). 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). Scores on the Eye Condition item (PedEyeQ) at baseline and at 6M follow-up were reversed; a decrease in group A, 89.73 [69.86-89.73] and 64.98 [50.02-74.99] (p<0.01), and an increase in group B, 69.96 [69.96-89.72] and 74.97 [43.62-85] (p=0.039). For the CVFQ, only Group B showed an improvement in General Vision (p=0.049) and Competence (p=0.031) scores.

Conclusions: Myopic children treated with atropine 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.