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Myopia progression in anisometropic amblyopia during combined treatment with orthokeratology and physiotherapy

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Abstract

Background: Myopia is labeled as one of the most common eye disorders, one of the most effective methods of its treatment being orthokeratological treatment. Anisometropic amblyopia continues to be treated by optical correction applied separately or in combination with occlusion or other therapies.

Material and methods: The study included 32 patients (64 eyes), who were divided by 8 patients (16 eyes) into 4 groups (2 primary and 2 control), depending on the presence or absence of amblyopia and the degree of myopia (small and medium). Subjects in the baseline group underwent combined treatment between orthokeratology and physiotherapy.

Results: The combined treatment resulted in the decrease of myopia according to the spherical equivalent by 60% in patients with amblyopia and mild myopia and from 90% in those without amblyopia. The values of the antero-posterior axis had a similar dynamic ($p < 0.001$). In patients with moderate myopia its evolution decreased by 95% compared to patients with amblyopia – by 60%. The degree of anisometropia decreased by 10% ($p > 0.05$). Corrected visual acuity depending on the degree of amblyopia increased by 50% in cases with mild amblyopia and 150% in cases with moderate amblyopia ($p < 0.001$). The absolute volume of accommodation increased by 70% in patients with mild amblyopia and by 300% in patients with moderate amblyopia ($p < 0.001$).

Conclusions: It is rational to apply refractive therapy in the treatment and prevention of acquired uncomplicated myopia, with an average index of quality of life of 93.1%, versus 39.3% for optical correction.

Key words: myopia, anisotropia, orthokeratology, physiotherapy, combined treatment.

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