Blood flow parameters in temporal short posterior ciliary arteries in myopic patients

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ABSTRACT

Introduction: Myopia is the most common refractive defect. Enlargement of the defect is the result of lengthening of the eyeball. This leads to the development of degenerative changes in the retina and choroid of the eye due to the stretching of tissues. The aim of our study was assessment of blood flow parameters in temporal short posterior ciliary arteries depending on the character of degenerative lesions found in the ocular fundus in myopic people.

Material and Methods: The study involved 70 myopic people (17 men and 53 women) aged 18-79 years (44.9 ± 18.3) with eyeball length of 22.61mm-33.36mm (27.9±5.37). Degenerative lesions in the ocular fundus were thoroughly examined in each study participant. The patients were divided into 4 groups, depending on the nature and extent of the lesions. Blood flow parameters were assessed (maximum velocity Vmax, minimum velocity Vmin, mean velocity Vm, resistive index RI and pulsatility index PI) in short posterior ciliary arteries located on temporal side of the optic nerve, by color Doppler imaging (CDI).

Results: The progression of degenerative lesions in the ocular fundus was associated with slightly varying correlations of blood flow through the cilliary vessels depending on temporal locations. In the temporal short posterior ciliary vessels, blood flow was decreased statistically significantly (reduced Vmax, Vmin, Vm), both in the right and left eyes. The PI and RI changes were insignificant.

Conclusions: Worsening of blood flow through the temporal short posterior ciliary arteries was associated with deterioration of degenerative lesions in the ocular fundus in myopic patients.

Key words: degenerative lesions, temporal short posterior ciliary arteries, CD-imaging