

Astaxanthin increases choroidal blood flow velocity

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Japanese Journal of Ophthalmology, 2008, Volume 52, Number 3, Pages 175-181

Abstract

Purpose

Previous studies have reported that astaxanthin (AXT) has antioxidative and anti-inflammatory effects in addition to its ability to shorten blood transit times. As laser speckle flowgraphy (LSFG) can noninvasively visualize the hemodynamics of the choroidal circulation, we used the technique to evaluate whether continuous ingestion of 12 mg of AXT per day could increase quantitative blood flow velocity.

Methods

In this randomized, double-blind, placebo-controlled study, we examined 20 healthy volunteers who ingested 12 mg AXT or placebo capsules over a 4-week period. LSFG was measured in the right eyes of all subjects at pre-ingestion, and at 2 and 4 weeks after the treatment of AXT. LSFG values were used to calculate the square blur rate (SBR), which is a quantitative index of relative blood flow velocity.

Results

A significant increase of the macular SBR was seen 4 weeks after AXT ingestion when compared to the pre-ingestion values (Wilcoxon signed-rank test, $P=0.018$). In contrast, no statistical difference in the macular SBR was detected in the placebo group (Friedman test, $P=0.598$). No subjective or objective adverse events were found after the 12-mg AXT ingestion.

Conclusions

Results suggest that administration of AXT over a 4-week period can elevate the choroidal blood flow velocity without any adverse effects.