

Homocysteine and Hydroxyproline Levels in Patients with Primary Open-Angle Glaucoma

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Aims: To investigate the levels of homocysteine (Hyc) and hydroxyproline (Hyp) in aqueous humor and plasma of human eyes with primary open-angle glaucoma (POAG) and to correlate their concentrations with the severity of glaucoma.

Methods: Eighty five patients with POAG and thirty five patients with senile cataract (control group) were enrolled in the study prospectively. Aqueous humor samples were obtained by paracentesis from glaucoma and cataract patients who were undergoing elective surgery. Aqueous humor and corresponding plasma samples were analyzed for Hyc and Hyp concentrations by high performance liquid chromatography and spectrometrically respectively.

Results: Hyc and Hyp levels were significantly higher in aqueous humor of POAG patients with respect to the comparative group of cataract patients ($P < 0.001$). No significant difference in the levels of Hyc and Hyp in plasma of POAG and cataract patients. A positive correlation was found between Hyc and Hyp in aqueous humor of POAG patients ($P < 0.001$). No significant correlation was found between either Hyc or Hyp levels and the severity of visual field loss.

Conclusion: Increased levels of aqueous humor Hyc and Hyp may be associated with POAG. In addition, Hyc and Hyp may be useful proteins levels in aqueous humor of POAG patients as a consequence of glaucomatous damage.