

ASSOCIATION BETWEEN GLAUCOMA DAMAGE AND PLASMA CONCENTRATION OF HEAT SHOCK PROTEIN 70

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Heat shock proteins (HSP) or stress proteins are induced in cells. They protect the cell and increase cell survival.

The aim of this research was to determine the plasma concentration of HSP 70 in patients with primary open-angle glaucoma with elevated intraocular pressure (POAG-HTG) and patients with pseudoexfoliative open-angle glaucoma (XFG), and to investigate the relationship between this biomarker and the structural and functional characteristics of glaucoma.

The study included 90 participants divided into three groups: 37 patients with primary open-angle glaucoma with increased intraocular pressure (hypertensive glaucoma, POAG-HTG), 24 patients with pseudoexfoliative open-angle glaucoma (XFG), and 29 participants without systemic diseases and glaucoma, matched by sex and age (control group of subjects, CONT). The concentration of circulating HSP 70 was measured in participants' plasma using the sandwich enzyme-linked immunosorbent assay (ELISA).

Plasma levels of HSP 70 were very similar in all three groups of participants, without any significant differences among the examined patients. A significant negative correlation of the plasma concentration of HSP 70 and RNFL Savg ($p < 0.05$) was found in POAG-HTG patients, whereas the negative correlations of HSP 70 with MD ($p = 0.0538$) and with RNFL Iavg ($p = 0.0584$) were very close to statistical significance.

There was no increase in the plasma concentration of HSP 70 in POAG-HTG and XFG patients. There was an interdependence between the plasma level of HSP 70 and the examined clinical parameters of POAG-HTG patients (MD, RNFL Avg, RNFL Savg and RNFL Iavg). HSP 70 can be a significant biomarker for glaucoma.

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