

## Connective tissue growth factor and tissue inhibitor of matrix metalloproteinase-2 in patients with exfoliative glaucoma

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**Purpose:** To investigate the aqueous humor levels of connective tissue growth factor (CTGF), matrix metalloproteinase-2 (MMP-2), and tissue inhibitor of matrix metalloproteinase-2 (TIMP-2) in human eyes with exfoliative glaucoma, primary open-angle glaucoma, and senile cataract patients.

**Design:** A prospective comparative study.

**Patients and Methods:** Sixty patients with glaucomas and twenty five patients with senile cataract of matched age and gender were enrolled in the study prospectively. Patients were classified into three groups; group I comprised 30 patients with exfoliative glaucoma (XFG), group II comprised 30 patients with primary open-angle glaucoma (POAG), and group III comprised 25 patients with senile cataract (controls). Aqueous humor samples were obtained by paracentesis at the time of elective surgery for glaucomatous and cataractous patients. CTGF, MMP-2, and TIMP-2 were measured in aqueous humor by specific enzyme linked immunosorbent assay (ELISA) kits, and total aqueous humor protein content assessed by lowry method.

**Results:** There was significant increase in aqueous humor levels of CTGF and TIMP-2 in XFG patients compared to the corresponding values of POAG patients or controls. The MMP-2 aqueous humor level was significant increase in the XFG patients when compared with controls ( $P < 0.001$ ). Moreover, the total protein level in aqueous humor of eyes with the XFG patients was significantly higher than in POAG patients or controls ( $P < 0.001$ ). A positive correlation was found between CTGF and MMP-2 in aqueous humor samples of XFG patients ( $P < 0.001$ ).

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