別紙４

研究成果の刊行物に関する一覧表

書籍

著者氏名	論文タイトル名	書籍全体の編集者名	書　籍　名	出版社名	出版地	出版年	ページ
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Noma H, **Mimura T** Yasuda K, Shimura M.	Vascular endothelial growth factor and its soluble receptors-1 and -2 in iris neovascularization and neovascular glaucoma.	Ophthalmologica		In press	2014

III. 研究成果の刊行物・別刷

代表的な英文１報とレビュー論文1報のみ添付する

CLINICAL SCIENCES

Association of Inflammatory Factors With Macular Edema in Branch Retinal Vein Occlusion

Hidetaka Noma, MD; Tatsuya Mimura, MD; Shuichiro Eguchi, MD

Objective: To evaluate the association between vitreous fluid levels of inflammatory factors and macular edema in patients with branch retinal vein occlusion (BRVO).

Methods: In 39 patients with BRVO and macular edema and 21 individuals with idiopathic macular hole (MH) serving as controls, vitreous fluid samples were obtained during vitreoretinal surgery, and the levels of vascular endothelial growth factor (VEGF), soluble VEGF receptor 2 (sVEGFR-2), soluble intercellular adhesion molecule 1 (sICAM-1), interleukin 6 (IL-6), monocyte chemotactic protein 1 (MCP-1), pentraxin 3 (PTX3), and pigment epithelium-derived factor (PEDF) were measured by enzyme-linked immunosorbent assay. Macular edema was examined by optical coherence tomography.

Results: Vitreous fluid levels of sVEGFR-2, VEGF, sICAM-1, IL-6, MCP-1, and PTX3 were significantly higher in the patients with BRVO than in those with MH; however, the PEDF level was significantly lower in the BRVO group. Vitreous fluid levels of all 7 factors were significantly correlated with the retinal thickness at the central fovea. There were also significant correlations of sVEGFR-2 with sICAM-1, IL-6, MCP-1, and PTX3 but no correlation with VEGF. However, there were significant correlations of VEGF with sICAM-1, IL-6, MCP-1, and PEDF in the BRVO group.

Conclusions: Vitreous fluid levels of sVEGFR-2, VEGF, sICAM-1, IL-6, MCP-1, PTX3, and PEDF are strongly correlated with retinal vascular permeability and the severity of macular edema in patients with BRVO. These findings may be useful for understanding macular edema and developing new treatments for BRVO.

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Review

The role of SIRT1 in ocular aging

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ABSTRACT

The sirtuins are a highly conserved family of nicotinamide adenine dinucleotide (NAD+)-dependent histone deacetylases that helps regulate the lifespan of diverse organisms. The human genome encodes seven different sirtuins (SIRT1-7), which share a common catalytic core domain but possess distinct N- and C-terminal extensions. Dysfunction of some sirtuins have been associated with age-related diseases, such as cancer, type II diabetes, obesity-associated metabolic diseases, neurodegeneration, and cardiac aging, as well as the response to environmental stress. SIRT1 is one of the targets of resveratrol, a polyphenolic SIRT1 activator that has been shown to increase the lifespan and to protect various organs against aging. A number of animal studies have been conducted to examine the role of sirtuins in ocular aging. Here we review current knowledge about SIRT1 and ocular aging. The available data indicate that SIRT1 is localized in the nucleus and cytoplasm of cells forming all normal ocular structures, including the cornea, lens, iris, ciliary body, and retina. Upregulation of SIRT1 has been shown to have an important protective effect against various ocular diseases, such as cataract, retinal degeneration, optic neuritis, and uveitis, in animal models. These results suggest that SIRT1 may provide protection against diseases related to oxidative stress-induced ocular damage, including cataract, age-related macular degeneration, and optic nerve degeneration in glaucoma patients.