

Measurement of Angiogenesis Promotors and Cytokines Concentrations in Intraocular Fluid of Patients with Proliferative Diabetic Retinopathy

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Abstract

Introduction: To prove the suitability of multiplex analysis for measurement of changes of cytokines and angiogenic factors in intraocular fluid of patients with proliferative diabetic retinopathy (PDR) and to determine its clinical applicability for future routine use in ocular medicine.

Patient cohort: Patients with proliferative diabetic retinopathy. Control group patients before cataract surgery without any ocular pathology

Methods: Intraocular fluid samples were aspirated from anterior chamber of patients with PDR. Concentrations of IL8, VEGF, EGF, IL 6, IP10, MCP1, PDGF, Rantes, BDNF, CNTF TGFb1 and IL 10 were measured simultaneously in intraocular fluid using multiplex panel kits from Millipore comp. (USA) and Luminex 100 instrument (Luminex corp., USA). Levels of biomarkers were compared between groups by Wilcoxon test.

Results: Multiplex analysis is a suitable method for angiogenesis promotors measurement, because concentrations were generally measurable through the use of multiplex analysis. Complete results will be presented but a most important observation we confirmed were significantly increased concentrations of VEGF in PDR patients in comparison to control group.

Conclusion: Multiplex analysis enables an easy simultaneous measurement of multiple markers in a very small sample volume and so enables the use of biomarker analyses in intraocular fluid in a future as a standard method."

Prospective: To confirm the right choice of analytes and the system of results interpretation for multiplex panel in larger patient cohorts and to evaluate the possibilities of use in diagnosis patient monitoring in ocular medicine.