**Growth Factors in the Aqueous Humor of Diabetic and Non-Diabetic Eyes Undergoing Cataract Extraction**

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Although growth factors have been individually investigated with regards to specific diseases, no study has been done to determine an aggregate of normal values for these growth factors. Diabetes mellitus is known to cause degradation of the blood-ocular barrier but the effect of this on growth factor and cytokine levels in the aqueous humor has also not been previously investieated .

supernatant was extracted.  These samples were then stored in a minus 80 freezer until all samples were ready for processing.

*Sample Analysis:*

The samples were then processed using Luminex multiplex bead technology (Luminex Corporation, Austin, TX) and tested for platelet derived growth factor (PDGF), brain derived neurotrophic factor (BDNF), glial cell-line derived neurotrophic factor (GDNF), transforming growth factor beta (TGF ), epidermal growth factor (EGF), fibroblast growth factor (FGF), vascular endothelial growth factor (VEGF), hepatocyte growth factor (HGF), tumor necrosis factor    (TNF ), interferon alpha (IFN ), interferon gamma (IFN ), and interleukin (IL) 1, 2, 4, 5, 6, 8, and 10.  The samples were diluted if needed to insure adequate aqueous humor for analysis.  The samples were then mixed with the proper Luminex beads (Invitrogen Corporation, Carlsbad, CA) and pla

acquired from each patient (Westfall & Young, 1993). The p-values were determined using a computer-intensive method based on 10,000 (bootstrap) samples drawn randomly and independently from the residual errors pooled from the control and test groups.

**Results:**

The control group showed an average age of 69.2 years with male:female ratio of 14:11. The diabetic group had an average age of 67.9 years

humor.  Additionally, growth factors and other cell signaling factors direct the function of the

anterior segment[1].  For example, it has been well documented that pr

noncataractous eyes, or truly non-diseased eyes, could not be used. Next, the dilutions of the samples also skew the results. The dilutions may render a few of the growth factors undetectable. Lastly, by testing a large number of factors, the chance of randomly finding a difference is increased. Statistically adjusting for this type 1 error creates a higher threshold for achieving significance in this study.

Despite these limitations, this study does provide a methodology for future testing. The

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