MODULATION OF WOUND HEALING AFTER GLAUCOMA SURGERY

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Purpose: In 30-50% glaucoma filtration surgery fails due to excessive postoperative scarring. Current anti-scarring therapies have blinding complications, so there is a need for safer alternatives. This study was designed to determine if inhibition of VEGF (pegaptanib; Macugen™); *Pfizer*) can reduce wound healing after glaucoma filtration surgery.

Previous results: Recently we provided data that VEGF plays a major role in the process of wound healing after glaucoma surgery. A monoclonal humanized antibody (bevacizumab, Avastin™*; Genentech*) significantly improved glaucoma surgery outcome in a rabbit model of aggressive scarring. The collagen deposition and vascularity was significantly reduced after bevacizumab treatment.

Methods: The *in vitro* effect of pegaptanib on the Tenon fibroblasts will be investigated by using a conjunctival fibroblast mediated proliferation assay. The effect of the VEGF-aptamer will be investigated in a rabbit model for glaucoma surgery by studying vascular density, fibrosis and inflammation.

Conclusions: This study will shed new light on the exact role of pegaptanib in the inhibition of inflammation and fibrosis after glaucoma filtration surgery. These insights would help us to determine which therapy will be the most efficient in order to reduce wound healing after glaucoma surgery.