

## **The Inhibitory Effect of Different Concentrations of Topical Bevacizumab on Corneal Neovascularization**

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**Purpose:** To evaluate the effect of different concentrations of topically administered bevacizumab (Avastin) on experimental corneal neovascularization in rats.

**Methods:** Corneal neovascularization was induced by chemical cauterization with silver nitrate sticks applied on the center of the corneas of 37 Wistar rats. The rats were then randomized to four topical treatment groups: Group 1 (n=10)- 4 mg/mL bevacizumab, Group 2 (n=9)- 2 mg/mL bevacizumab, Group 3 (n=10)- 1 mg/mL bevacizumab, and Group 4 - control (n=8) saline. All drops were initiated immediately after cauterization and applied twice a day for 7 days. Corneal neovascularization was assessed 8 days after cauterization in a masked fashion, both qualitatively by clinical evaluation and quantitatively by blood vessel count in photographs of histological sections.

**Results:** On clinical evaluation Groups 1 and 2 had significantly less neovascularization as compared to the saline-treated control group (P= 0.006 and P=0.024, respectively). On histopathological evaluation only Group 1 was significantly different from controls (5% significance level), and normal corneal epithelium was seen in all groups.

**Conclusion:** Topically administered bevacizumab at a concentration of 4 mg/mL significantly reduces the corneal neovascularization, based on both clinical and histopathological evaluations, while lower concentrations were less effective on both parameters. No corneal epitheliopathy was found using these concentrations.