INTRODUCTION:

Bevacizumab (Avastin; Genentech, South San Francisco, CA) is a full-length humanized monoclonal antibody binding to all isoforms of vascular endothelial growth factor (VEGF) [8]. Current case reports and studies in the rabbit showed evidence of reducing bleb failure after subconjunctival injections of bevacizumab [9-13].

Purpose: The aim of this study was to assess, if the postoperative injection of bevacizumab reduces the number of postoperative subconjunctival 5-FU injections. Further, we evaluated the effect of subconjunctival bevacizumab as an adjunct to 5-FU on the IOP-outcome, bleb-morphology, the number of postoperative medications and complications.

METHODS:

A total of 67 glaucoma patients who underwent TET with MMC were analysed retrospectively (follow-up 25 ± 18 months). Surgery was performed exclusively by one experienced glaucoma specialist using a standardised technique. Postoperatively one group of patients received subconjunctival applications of 5-FU exclusively. The other group of patients received 5-FU as an adjunct to subconjunctival injection of bevacizumab. Baseline patient characteristics are shown in Table 1. Complete success was defined as 1) an IOP ≤21 mmHg and >20% pressure reduction from baseline or 2) IOP ≤18 mmHg without glaucoma medication at the last follow up. Qualified success was defined as 1) an IOP ≤21 mmHg and >20% pressure reduction from baseline or 2) IOP ≤18 mmHg with and without glaucoma medication at the last follow up.

RESULTS:

The group with bevacizumab as an adjunct to 5-FU had a mean of 4.2 ± 2.8 (0-12) (mean ± standard deviation (min-max)) 5-FU injections. The group without bevacizumab had 6.4 ± 3.3 (0-15) 5-FU injections respectively. The additive injection of bevacizumab significantly lowered the amount of 5-FU injections by 2.19 ± 4.33 (p<0.005). Thus, bevacizumab significantly lowered the amount of 5-FU injections. There was no significantly lower IOP in the group of patients that received 5-FU and bevacizumab compared to the group of patients that received 5-FU only.

A significant reduction of vascularisation and cork screw vessels could be found in both groups (p<0.005), yet there was no difference between the two groups. Postoperative complications were significantly higher for both groups when more 5-FU was injected (p=0.004). No significant difference in best corrected visual acuity (p=0.387) and visual field testing (p=0.089) between preoperative to last follow up could be found between the two groups. Preoperative to postoperative comparisons are found in Table 2. Complete and qualified success are summarized in Table 2 and Figure 1.

CONCLUSION:

The postoperative injection of bevacizumab reduced the number of subconjunctival 5-FU significantly by 2.19 injections. A significant difference in postoperative IOP-reduction, bleb-morphology, postoperative medication and complications was not detectable.

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References

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