ROLE OF INTRAVITREAL BEVACIZUMAB IN THE TREATMENT OF MACULAR OEDEMA DUE TO RETINAL VEIN OCCLUSION

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INTRODUCTION:
Retinal vein occlusions (RVOs) remains the second most common sight-threatening vascular disorder after diabetic retinopathy. It is caused due to compression of retinal vein by arteriosclerotic artery resulting in turbulent venous flow-endothelial damage- leakage of fluid and blood. The main cause of visual loss in RVO is macular oedema.

VEGF has been implicated in the process of new vessel formation and increased vascular permeability. Of the VEGF receptor blockers in clinical trials and practice, Bevacizumab (Avastin, Genentech, Inc., San Francisco, CA), a full-length, humanized, monoclonal antibody directed against VEGF is gaining popularity for treatment of macular edema. Originally used for metastatic colorectal carcinoma, this PAN-VEGF blocking monoclonal antibody was found to have beneficial effect in Retinal vein occlusion, Wet ARMD, Diabetic retinopathy.

In Retinal Vein occlusions, the vascular changes are acute and hence even with single Anti-VEGF injection, there is significant reduction in CMT

AIM: To study the effectiveness of intravitreal Bevacizumab (Avastin) in macular oedema due to retinal vein occlusion

STUDY: Hospital based interventional study. Sample size: 50 patients

METHODS: All the patients with retinal vein occlusion (CRVO & BRVO) with centre involving macular oedema of CMT >300 microns were taken in the study, the patients with media opacities and other causes for macular edema were excluded. Patients who met inclusion criteria received IVA 1.25mg in 0.05 ml. BCVA, ophthalmic examination, OCT-Macula were performed at baseline and after 1 month post injection. Re-injections were given if OCT-Macula showed persistent or recurrent macular oedema(ME) in follow-up visits. Each were evaluated at follow-up visits monthly till 6 months. The results are analyzed according to OCT values.

CONCLUSION: Intravitreal Bevacizumab (IVA) seems to be safe and effective in treatment of RVO associated with macular oedema in reducing the CMT, however higher randomised controlled trails are required to establish its safety.

RE-SULTS: Out of 50 Retinal vein occlusion cases CRVO were 17(34%), HRVO were 3 (6%) and BRVO were 30 (60%) Mean Age of presentation was 62.35yrs, Females accounted for 34% and males accounted for 66%.

Sex distribution

<table>
<thead>
<tr>
<th>Age Group</th>
<th>CRVO</th>
<th>HRVO</th>
<th>BRVO</th>
<th>%</th>
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</table>
| <40yrs    | 0    | 0    | 3    | 6%
| 41-50yrs  | 2    | 1    | 4    | 14%
| 50-60yrs  | 3    | 2    | 7    | 24%
| 61-70yrs  | 10   | 0    | 13   | 46%
| >70yrs    | 2    | 0    | 3    | 10%
| Total     | 17   | 3    | 30   | 66%

Mean visual acuity in BRVO is 0.78(6/36) log mar units & in CRVO Mean visual acuity is 1.23(6/120) log mar units.

KEYWORDS:

ABSTRACT
In Shaaban A. Mahey study the mean baseline VA was 20/240 (log 6.58) and improved to 20/60 (log MAR 0.48 ± 0.32).

In Pielen A et al study gain in visual acuity after 12 months was observed with Bevacizumab of around 1.25 mg: +16.1 letters (8 injections) in CRVO and in BRVO resulted in a visual acuity gain of +18.3 letters.

— No intraocular or systemic adverse effects were reported in our study during the 6 months of follow-up.

CONCLUSION

— Intravitreal Bevacizumab (IVA) seems to be safe and effective in treatment of RVOs in reducing the CMT; however higher randomised controlled trials are required to establish its safety.

— The effect lasted for about 4-6 weeks, then started to deteriorate again with need for re-injection. However there was a variation from one patient to another in which considerable proportion of eyes with BRVO cured by one IVA injection while others with CRVO showed recurrence with need for re-injections.

The response for improvement and recurrence depend on degree of macular ischemia, amount of retinal hemorrhages, extend of irreversible photoreceptor damage and progression over time from perfused to non-perfused RVOs.

— Limitations of the current study are
  - Relatively short-term follow-up period
  - Small sample size
  - Lack of a control group
  - Use of off labelled drug

### References

1. Early Avastin management in acute retinal vein occlusion. Shaaban A. Mehany, (M.D), Khaled M. Mouzad (M.D), Ahmad M. Shawkat (M.D)

2. Bevacizumab in Inflammatory and Vascular Diseases of the Eye. Dr. Anju S. Raju MBBS

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