Comparasion of intraoperative triamcinolone and Bevacizumab with conjuctival autograft alone in pterygium surgery

Sunil Kumar1,*
1 Dept. of Ophthalmology, Patna Medical College, Patna, Bihar, India

A R T I C L E   I N F O
Article history:
Received 02-12-2019
Accepted 24-11-2019
Available online 17-03-2020

Keywords:
Bevacizumab
Pterygium
Triamcinolone

A B S T R A C T
Pterygium is a degenerative condition of subconjuctival tissue that undergoes elstotic degeneration and proliferates as vascular granulation tissue under the epithelium. This ultimately encroaches the cornea destroying its epithelium, superficial stroma and the Bowman's membrane.1 It is occurs more commonly on the nasal side than the temporal side, but it can occur on both sides (double pterygium).2 Pathogenesis is mainly implicated to ultraviolet radiation exposure. It has highest prevalence and in the tropical areas near the equatorand to lesser abd milder degree in cooler climates. The increased levels of proangiogenic factors like basic fibroblast growth factor (BFGF), transforming growth factor Beta (TGF-b), vascular endothelial growth factor(VEGF) and platelet derived growth factor(PDGF) are responsible for formation and recurrence of Pterygium; however the most important of this growth factor is VEGF.3

Aim: To compare the efficacy of intraoperative subconjuctival injection of Triamcinolone and Bevacizumab with conjuctival autograft alone in primary Pterygium surgery.

Materials and Methods: Total 150 patients divided in three groups (50 patients of each group), underwent primary Pterygium surgery between MAY 2016 to APRIL 2017. In group A, Conjuctivalauto graft alone was done while in groups B & C, it was combined with Intraoperative Subconjuctival Injection of Triamcinolone4 (0.2mg/ml) and Bevacizumab5,6 (2.5mg/0.1ml).

Result: Recurrence rate at 12 month was more in auto graft alone (group A) than in the auto graft in combination with Triamcinolone (group B) and Bevacizumab (group C) respectively.

Conclusion: Subconjuctival injection of Triamcinolone & Bevacizumab can be combined with Conjuctivalauto graft intraoperaatively to prevent but Triamcinolone may prefer due to more cost effectiveness.

© 2020 Published by Innovative Publication. This is an open access article under the CC BY-NC-ND license (https://creativecommons.org/licenses/by/4.0/)

1. Introduction

Pterygium is a fibro vascular growth of bulbar conjunctiva, growing upon cornea on either side, usually from nasal part of the limbus within the palpebral aperture. It is a common ocular surface disorder in hot tropical climate. The exposure to ultraviolet radiation is thought to be a major risk factor, as the pathogenesis is unclear. The common Pterygium related symptoms are redness, foreign body sensation, irritation, lacrimation, reduced visual acuity, cosmetic disfiguration and difficulty in contact lens fitting.

Treatment of the pterygium is vertical excision of pterygium with living bare sclera, but the recurrence of pterygium is very common which about 55.9% to 89% is. The recurrent pterygium is very difficult to manage as there is thinning of underlying cornea and extensive scaring.

Various method used to prevent the recurrence of pterygium are beta radiation mitomycine, thiotepa, 5 fluorouracil. These agents are tried intraoperatively in addition to surgical excision now the recent trend is Conjuclitival autograph which shows less recurrence. Further recurrence is reduced by intraoperative Triamcinolone and Bevacizumab (avastin). Factors responsible for recurrence of Pterygium are postoperative inflammation and fibro vascular growth...
2. Materials of Methods

The present study design was randomized blind study. Total 150 patients of primary nasal pterygium were included in the study. The selection of patients done at EYE OPD of Eye department, Patna Medical College, Patna from MAY 16 to APRIL 17. The inclusion criteria-only primary pterygium. The Exclusion criteria-recurrent pterygium, infection, ocular surface disorder, diabetes, chronic dacrocystities. Total 150 eyes of 150 patients having primary nasal pterygium were selected for the study who met the all criteria for inclusion. The informed consent was taken for the study. The complete ocular examination such as visual acuity, slit lamp examination, fundoscopy, Applanation tonometry was done before and after surgery. On the basis of systemic random sampling all 150 eyes of 150 patients divided into three groups i.e groups A, B, and C. The first patient of study are put in group A, second in group B, and third in group C irrespective of grading and stages of pterygium.

Group A: surgical excision of pterygium with Conjuc-tivial autograft alone.

Group B: Conjuctivialauto graft with subconjunctival injection of Triamcinolone intraoperatively.

Group C: with Bevacizumab intraoperatively a long with conjunctival autograft.

All surgery was done by single surgeon. After taking all aseptic precaution all 150 eyes were subjected to surgery under local anesthesia of xylocaine 4% topically and xylocaine 2% local infiltration. In all 150 eyes the pterygium were dissected and peeled off from underlying cornea, 4.5mm of conjunctiva covering head and body of pterygium was excised leaving behind bare sclera. Then conjunctival auto graft was put on bare sclera and secured by suturing.

Group A: Only conjunctival autograft done

Group B: Conjuctival autograft + subconjunctival Triamcinolone 12mg given in lower fornix

Group C: Conjunctival autograft + subconjunctival Bevacizumab 2.5mg/0.1ml given subconjunctival in lower fornix.

2.1. Postoperative Care

Antibiotics drops (Moxi+Ketorolac) one drop thricely daily, steroid drops (Predforte) one drop thricely daily. Tear substitute one drop four times in a day.

All the sutures were removed after 2weeks, Postoperative follow up was done on day1, 1st week, 2nd week, 1st month and 3rd, 6th, 12th month after surgery. Recurrence is defined as- if the size of pterigyium is more than 1.5mm across the limbus over cornea.

3. Results

The relevant data obtained from the study were put on master chart and analyzed with the help of software SPSS (version 15). Since it was small sample study so student ‘t’ test were used to anlysed the data the result were tabulated in form of mean +/- SD and analyzed on the basis of ‘t-test’ and role of significance was determined by using its P value, P value < 0.05 was taken as statistically significant. The mean age of the patient was 39+-10 years ranging from 24 to 59 years. All the patients were followed up completely for 12 months. The recurrence was seen in 17 patients in Group A, 8 patients in Group B & 7 patients in Group C. All recurrences occurred within 5 to 9 months of surgery. It further observed that recurrences were more common in younger age group. All 150 patients had at least 12 months of follow up. Average age of the patients was 39.2+/-10.4 years (range 24-56years). Pterygium with grade T1 were seen in 17 patients, grade T2 were seen in 84 patients, grade T3 were seen in 39 patients. There were 50 patients in each Group A, B& C. Table 1 shows mean age of patients in the groups. Table 2 shows pterygium grade of eyes. There were no statistically significant differences in age between the three study groups. No complication noted during the study.

The main objective was focused on postoperative recurrence of pterygium in each group. It was 17 patients in group A, 8 patients in Group B and 7 patients in Group C. So, the recurrence rate s in Group A, B & C were 34%, 16% and 14% respectively. This difference in recurrence of pterygium were statistically significant (p<0.05) in Group A&C and were statistically insignificant (p>0.05) in Group B. The average month of recurrence of pterigyium was 6.5 months. Younger age group showed more recurrence than the older age group. Intraocular pressure was raised in two eyes in group B (which were given Triamcinolone subconjunctivally), was controlled by topical medications. No complication was seen in the study groups through the follow up period.

4. Discussion

The objective of this prospective, randomized study was to evaluate the outcome and safety of triamcinolone and bevacizumab, and its recurrence.

The recurrences observed were actually less in group B(16%) and C(14%), which had received triamcinolone and bevacizumab respectively, while it was higher in group A(34%) which had undergone only conjunctival autograft.

Having known the etiopathogenesis, adjunct therapies like Conjuctival autograft application of metomycin C1, Use of cyclosporine, sub-Conjuctival Triamcinolone and Bevacizumab along with excision of Pterygium were tried.
5. Source of Funding

None.

6. Conflict of Interest

None.

References

1. Parson Diseases of The Eye, Edition 22nd .
2. Bahar I, Kaiserman I, Mcallum P, Rootman D, Slomovic A. subconjuctival Bevacizumab injection for corneal neovascularization in recurcurrent Pterygium. Curr Eye Res. 2008;33:23–28.
3. Mauro J, Foster CP. pathogenesis and the role of subconjuctival Bevacizumab in treatment. Seminophthalmol. 2009;24:130–134.
4. Kheirkhah A. Effect of intraoperative steroid injection on the outcome of Pterygium surgery. Eye. 2013;27:906–914.
5. Teng CC, Patel NN, Jacobson L. Effect of Subconjunctival Bevacizumab on Primary Pterygium. Cornea. 2009;28(4):468–470.
6. Stival LRS. Efficacy and safety of subconjunctival Bevacizumab. Arq Bres Ophthalmol. 2014;77(1):4–7.
7. Ozsuctu M. Repeated bevacizumab injection vsmetomycin-C in rotational conjunctival flap for prevention of pterigium of recurrence. Indian J Ophthalmol. 2004;62(4):407–411.
8. Razeghinejad MR, Hosseini H, Ahmadi F, Rahat F, Eghbal H. Preliminary Results of Subconjunctival Bevacizumab in Primary Pterygium Excision. Ophthalmic Res. 2010;43(3):134–138.
9. Reza RM. Subconjunctival bevacizumab for primary pterigium excision; a randomized clinical trial. J Ophthalmic Vis Res. 2014;9(1).

Author biography

Sunil Kumar Associate Professor

Cite this article: Kumar S. Comparasion of intraoperative triamcinolone and Bevacizumab with conjunctival autograft alone in pterygium surgery. Indian J Clin Exp Ophthalmol 2020;6(1):84-86.