

Analysis of Efficacy and Safety of Contact Lenses Used in the Trabeculectomy among Patients with Glaucoma: An Institutional Based Study

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ABSTRACT

Background: Trabeculectomy provides a non-physiologic route for aqueous outflow and complications may occur despite the best efforts of the surgeon. The present study was conducted for analyzing the efficacy and safety of the contact lenses used in the trabeculectomy among glaucoma patients.

Materials & Methods: A total of 100 eyes of 100 patients who had primary angle-closure glaucoma (PACG) were enrolled. All the patients were divided in two study group as follows: Group A: Patients using contact lens after the surgery, and Group B: Patients without contact lens. Grading of the blebs was done using Moorfields Bleb Appearance Grading Scale (MBGS). All the results were recorded and analyzed using SPSS Software.

Results: As per Moorfields Bleb Appearance Grading Scale (MBGS), mean area of 1a among subjects of group A and group B was 2.6 and 2.8 respectively. Mean area of 1b among subjects of group A and group B was 3.5 and 2.8 respectively. Mean IOP at baseline among subjects of group A and group B was 28.69 mm of Hg and 29.46 mm of Hg respectively.

Conclusion: Contact lens can effectively reduce the bleb leak after trabeculectomy.

KEYWORDS: Contact lenses, Trabeculectomy.

INTRODUCTION

It Trabeculectomy provides a non-physiologic route for aqueous outflow and complications may occur despite the best efforts of the surgeon. Timely detection and management of these complications is vital for a good surgical outcome. The combined surgical treatment of glaucoma and cataracts has been the subject of some controversy. Recent advances in cataract incisional techniques and in glaucoma medications have changed the indications for surgery by minimising the severity of complications. In the early 1980s, extracapsular cataract extractions with trabeculectomy were reported to be effective, but larger wound size was associated with more inflammation and hyphaema.¹⁻³

The success of trabeculectomy performed in adults or children is enhanced by the use of antifibrotic agents, which suppress fibroblast activity. A study with a shorter follow-up reported a success rate of 67% using intraoperative mitomycin C as an adjunctive therapy to trabeculectomy performed for the treatment of

congenital or developmental glaucoma.⁴⁻⁶ Hence; the present study was conducted for analyzing the efficacy and safety of the contact lenses used in the trabeculectomy among glaucoma patients.

MATERIALS & METHODS

The present study was conducted in the Department of Ophthalmology, Sri Muthukumaran Medical College Hospital and Research Institute, Chikkarayapuram, Chennai, Tamil Nadu (India) for analyzing the efficacy and safety of the contact lenses used in the trabeculectomy among glaucoma patients. A total of 100 eyes of 100 patients were enrolled. Only those patients were enrolled who had primary angle-closure glaucoma (PACG). All the patients were divided in two study group as follows:

Group A: Patients using contact lens after the surgery, and

Group B: Patients without contact lens.

All the surgical procedures were performed under the hands of skilled and experienced surgeon. Grading of the blebs was done using Moorfields Bleb Appearance Grading Scale (MBGS).³ All the results were recorded and analyzed using SPSS Software.

RESULTS

As per Moorfields Bleb Appearance Grading Scale

(MBGS), mean area of 1a among subjects of group A and group B was 2.6 and 2.8 respectively. Mean area of 1b among subjects of group A and group B was 3.5 and 2.8 respectively. Mean IOP at baseline among subjects of group A and group B was 28.69 mm of Hg and 29.46 mm of Hg respectively. Mean IOP at 6 months follow-up among subjects of group A and group B was 11.82 mm of Hg and 11.39 mm of Hg respectively.

Table 1: Comparison of Bleb scores at follow-up

Area	Group A	Group B	p- value
1a	2.6	2.8	0.2250
1b	3.5	2.8	0.0010*
Height	1.5	1.6	0.998

*: Significant

Table 2: Comparison of mean Intra-ocular pressure

Time interval	Group A	Group B	p- value
Baseline	28.69	29.46	0.4152
Six months follow-up	11.85	11.39	0.3652
One year follow-up	13.22	12.852	0.8542

DISCUSSION

Patients with advanced glaucoma (AG), here defined as near total cupping of the optic nerve with or without severe visual field (VF) loss within 10° of fixation, i.e. scotoma encroaching on or splitting fixation, tend to have a worse visual and overall prognosis. They are at imminent danger of losing remaining vision and may also have various socioeconomic and health challenges such as stigmatization, unemployment or underemployment, morbidity/mortality, increased risk for driving accidents, falls, as well as mental health difficulties including depression. The encounter with such a patient is typically characterized by anxiety or fear and sometimes hopelessness from the patient's perspective. The physician may also feel that they are in a difficult position managing the patient's disease.^{6- 9} Hence; the present study was conducted for analyzing the efficacy and safety of the contact lenses used in the trabeculectomy among glaucoma patients.

As per Moorfields Bleb Appearance Grading Scale (MBGS), mean area of 1a among subjects of group A and group B was 2.6 and 2.8 respectively. Mean area of 1b among subjects of group A and group B was 3.5 and 2.8 respectively. Giampani J Jr et al¹⁰ evaluated the safety and effectiveness of trabeculectomy with mitomycin C in the management of childhood glaucoma using retrospective chart review of 114 patients (114 eyes) from 0–14 years of age with congenital or

developmental glaucoma. A post-surgical intraocular pressure of < 16 was observed in 47 eyes. The life-table success rates for intraocular pressure control at 24, 36, 48, and 60 months were 90.2%, 78.7%, 60.7% and 50.8%, respectively. The cumulative probability of failure was 40.8% at 12 months. Following surgery, endophthalmitis appeared in eight eyes (4.88%) after an average 36.96 months (range: 1.7–106 months). Other complications included expulsive hemorrhage, flat anterior chamber and bleb leak. It has been reported in pediatric patients that trabeculectomy without adjunctive antimetabolites achieves a successful outcome in 30% to 50% of cases. In our study, treatment was considered successful in 63 eyes (55.26%) within 61.16 +/- 26.13 months of follow-up. Trabeculectomy with mitomycin is safe and effective for short-term or long-term treatment of congenital or developmental glaucoma.

Mean IOP at baseline among subjects of group A and group B was 28.69 mm of Hg and 29.46 mm of Hg respectively. Mean IOP at 6 months follow-up among subjects of group A and group B was 11.82 mm of Hg and 11.39 mm of Hg respectively.

Gomes BA et al¹¹ investigated the accuracy of measuring intraocular pressure over a silicone hydrogel contact lens using Goldmann applanation tonometry in eyes with glaucoma and reported that agreement between Goldmann applanation tonometry with and without

contact lenses seems to be poor in patients with glaucoma, especially for high intraocular pressure. Stark WJ et al¹² evaluated the combined phacoemulsification with acrylic intraocular lens implantation and trabeculectomy with releasable sutures, without the use of antimetabolites, performed by one surgeon. A retrospective analysis revealed that postoperatively, the mean decreases from baseline were 19.2% for IOP and 84.1% for number of glaucoma medications; 85% of eyes required fewer glaucoma medications and 78% of eyes were medication free, with IOP control. There were no significant operative or postoperative complications. Combined phacoemulsification and trabeculectomy with releasable sutures, in the absence of antimetabolites, is a safe, effective, and stable alternative for patients with cataracts and glaucoma.¹²

CONCLUSION

From the above results, it can be concluded that contact lens can effectively reduce the bleb leak after trabeculectomy.

REFERENCES

1. Litin BS, Jones MA, Kwong EM, Herschler J. Effect of antineoplastic drugs on cell proliferation - individually and in combination. *Ophthalmic Surg.* 1985;16:34-9.
2. Mc Guigan LJB, Quigley HA, Luty G. The effects of D-penicillamine and daunorubicin in conjunctival fibroblast proliferation and collagen synthesis. *Invest Ophthalmol Vis Sci.* 1988;29:112-8.
3. A. P. Wells, N. N. Ashraff, R. C. Hall, and G. Purdie, "Comparison of two clinical bleb grading systems," *Ophthalmology* 2006; 113(1): 77-83.
4. Jaafar MS. *Ophthalmology annual.* Vol. 7. New York: Raven Press; 1988. Care of infantile glaucoma patient; 15-37.
5. Dickens CJ, Hoskins HD. Diagnosis and treatment of congenital glaucoma. In: Ritch R, Shields MB, Krupin T, editors. *The Glaucomas.* St. Louis: Mosby; 1989.

6. Anderson DR. Trabeculectomy compared to goniotomy for glaucoma in children. *Ophthalmol.* 1983;90:805-6.
7. Yamamoto T, Varani J, Soong HK, Lichter PR. Effects of 5-fluorouracil and mitomycin C on cultured rabbit subconjunctival fibroblasts. *Ophthalmol.* 1990;97:1204-10.
8. Zalish M, Leiba H, Oliver M. Subconjunctival injections of 5-fluorouracil following trabeculectomy for congenital and infantile glaucoma. *Ophthalmic Surg.* 1992;23:203-5.
9. Quigley HA. Results with trabeculectomy and study of reversible cupping. *Ophthalmol.* 1982;89:219-26.
10. Giampani J Jr, Borges-Giampani AS, Carani JC, Oltrogge EW, Susanna R Jr. Efficacy and safety of trabeculectomy with mitomycin C for childhood glaucoma: a study of results with long-term follow-up. *Clinics (Sao Paulo).* 2008;63(4):421-426.
11. Gomes BA, Turiel P, Cavalcanti RS, Moraes Jr HV, Santiago MR. The accuracy of Goldmann applanation tonometry over silicone hydrogel contact lenses in patients with glaucoma. *Contact Lens and Anterior Eye.* 2014 Aug 1;37(4):297-9.
12. Stark WJ, Goyal RK, Awad O, Vito E, Kouzis AC. The safety and efficacy of combined phacoemulsification and trabeculectomy with releasable sutures. *Br J Ophthalmol.* 2006;90(2):146-149.

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