

Original Research

Analysis of efficacy of two ophthalmic steroid-antibiotic combinations after cataract surgery

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ABSTRACT:

Background: The present study was conducted for comparing the efficacy of ophthalmic steroid-antibiotic combinations after cataract surgery. **Materials & methods:** A total of 40 patients were enrolled. Only those patients were enrolled who were scheduled to undergo cataract surgery. All the patients were broadly divided into two study groups as follows: Group A: Patients who received Fluorometholone-Gentamicin eye drops after cataract surgery, and Group B: Patients who received with combination of dexamethasone, neomycin, polymyxin B eye drops after cataract surgery. Preoperative examination of all the patients was done. Postoperative assessment of patients was done at day 7. All the results were recorded and analysed by SPSS software. **Results:** A total of 40 patients were enrolled. Mean age of the patients of group A and group B was 41.5 years and 43.9 years respectively. Significantly higher proportion of subjects of both the study groups were males. The conjunctival bacterial colony count on day 7 post-operatively was significantly less on group A in comparison to group B. **Conclusion:** Fluorometholone-gentamicin eye drops were more effective than Maxitrol eye drops in the reduction of ocular bacterial flora.

Key words: Antibiotic, Ophthalmic, Steroid

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INTRODUCTION

More than 9.5 million cataract surgeries are performed worldwide each year. Through a small incision (< 3.0 mm), a phacoemulsification probe that oscillates at ultrasonic speeds breaks up and removes the opaque cataract lens, and a permanent artificial lens is inserted into the original capsule that held the cataract. Serious complications from cataract surgery include retinal detachment (0.8%) and endophthalmitis (0.1%). Posterior capsular opacification, a more common postoperative condition (4.2% within 90 days), results from the proliferation and migration of retained lens epithelial cells across the posterior capsule and can be easily treated with a laser to create a clear aperture in the visual axis.¹⁻³

There is no hard and fast rule about when to operate for cataract. Essentially, surgery is considered when the likely improvement in vision compared with current problems make it worth taking the risk of

serious, sight threatening complications (although these are now uncommon with modern surgical practice). In the past, a combination of relatively crude surgical techniques and poor visual rehabilitation afterwards (no lens implants) meant that cataracts were left until they were very advanced ("ripe") before surgery was undertaken. However, as techniques have become more sophisticated (and safer) and the visual results have improved, surgery is undertaken at a much earlier stage. Indeed, the risks of serious complications may now be greater if the cataract has been left to an advanced stage.⁴⁻⁶ Hence; the present study was conducted for comparing the efficacy of ophthalmic steroid-antibiotic combinations after cataract surgery.

MATERIALS & METHODS

The present study was conducted for comparing the efficacy of ophthalmic steroid-antibiotic combinations after cataract surgery. A total of 40

patients were enrolled. Only those patients were enrolled who were scheduled to undergo cataract surgery. All the patients were broadly divided into two study groups as follows:

Group A: Patients who received Fluorometholone-Gentamicin eye drops after cataract surgery

Group B: Patients who received with combination of dexamethasone, neomycin, polymyxin B eye drops after cataract surgery

Preoperative examination of all the patients was done. Postoperative assessment of patients was done at day 7. All the results were recorded and analysed by SPSS software.

RESULTS

A total of 40 patients were enrolled. Mean age of the patients of group A and group B was 41.5 years and 43.9 years respectively. Significantly higher proportion of subjects of both the study groups were males. The conjunctival bacterial colony count on day 7 post-operatively was significantly less on group A in comparison to group B.

Table 1: Comparison of bacterial colony count at 7 day postoperatively

Bacterial colony count ($\times 10^6$ cfu)	Group A	Group B
Mean	23.2	38.4
SD	3.8	4.8
p- value	0.000 (Significant)	

DISCUSSION

Cataract surgery may be considered one of the most successful treatments in all of medicine. With continued advancements in techniques and technology, cataract surgery has evolved into a refractive procedure rather than simply a surgical treatment of cataract. Yet despite the worldwide availability of multiple IOL brands, materials, and models, not all lenses are suitable for every patient (and not all lenses are covered by health insurance companies). While modern cataract surgery has significantly improved the lives of many people throughout the world, perfection seems to be an elusive, moving target.⁶⁻¹⁰ Hence; the present study was conducted for comparing the efficacy of ophthalmic steroid-antibiotic combinations after cataract surgery.

A total of 40 patients were enrolled. Mean age of the patients of group A and group B was 41.5 years and 43.9 years respectively. Significantly higher proportion of subjects of both the study groups were males. The conjunctival bacterial colony count on day 7 post-operatively was significantly less on group A in comparison to group B. J J van Endt et al performed prospective, randomised, investigator-masked, parallel-group study to compare Fluorometholone-Gentamicin eye drops with Maxitrol (dexamethasone, neomycin, polymyxin B) eye drops in the reduction of ocular bacterial flora

and control of ocular inflammation after cataract surgery. One hundred and twelve (FML-Genta 54, Maxitrol 58) patients of both sexes undergoing cataract and posterior chamber lens implant surgery for visually disabling cataract were enrolled in the study and examined pre-operatively and post-operatively on days 1, 6-8 and 24-34. The baseline parameters were similar in the two study groups. The conjunctival bacterial colony count on day 6-8 post-operatively was significantly less on FML-Genta compared with Maxitrol ($p = 0.033$). There was no statistically significant difference between the two treatments in the degree of intra-ocular inflammation as assessed by flare and cells in the anterior chamber. Both treatments were judged to be equal in the global assessment of the success of therapy and local tolerance by the study patients and doctors.¹¹

S Russo et al evaluated both efficacy and safety of a new ophthalmic steroid-antibiotic fixed combination containing dexamethasone and netilmicin in the postsurgical management of cataract surgery. In total, 223 patients were randomly treated with dexamethasone 1 mg/ml plus netilmicin 3 mg/ml ($n=148$), or dexamethasone 1 mg/ml plus tobramycin 3 mg/ml ($n=75$, TOBRADEX) four times in a day for 7 \pm 1 days starting immediately after surgery. Efficacy (anterior chamber (AC) inflammation, conjunctival hyperaemia, corneal and lid oedema, ocular infection, pain, photophobia and tearing) and safety (burning, stinging, blurred vision, intraocular pressure, and visual acuity) were analysed in the operated eye after 1 and 7 \pm 1 days. A follow-up visit was performed at day 14 \pm 2. The extent of AC inflammation, measured by slit-lamp according to a standard scoring system, was used as primary efficacy parameter. At the primary end point (day 7) both fixed combinations were equally effective in reducing postoperative inflammation. The safety profile of the dexamethasone/netilmicin combination was excellent with no evidence of poor local tolerance or adverse reaction. A new fixed combination of dexamethasone and netilmicin was effective and safe in controlling ocular inflammation after cataract surgery.¹²

CONCLUSION

From the above results, the authors conclude that Fluorometholone-gentamicin eye drops were more effective than Maxitrol eye drops in the reduction of ocular bacterial flora.

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