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Assessment of Visual Outcome between Scleral Fixated Intraocular Lens and Anterior Chamber Intraocular Lens

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ABSTRACT

Background: Fixation of intraocular lenses in cases of insufficient or no capsular support is challenging and requires good surgical techniques to resolve different situations. The present study was conducted to assess visual outcome between scleral fixated intraocular lens and anterior chamber intraocular lens. **Methods:** The present study was conducted on 82 patients requiring eye surgery of both genders. Patients were classified into 2 groups. Group I patients underwent anterior chamber IOLs (ACIOLs) implantation either primary or secondary and group II patients underwent scleral fixated IOLs (SFIOLs) implantation either primary or secondary. In both groups, the pre and post-operative visual acuity was measured. **Results:** There was more improvement in BCV A score in patients with 6/12- 6/18 eye sight in both groups followed by patients with 6/60 and worse eye sight in both groups, whereas in patients with 6/6- 6/9 less improvement was observed in both groups (P> 0.05). **Conclusion:** Authors found both scleral fixated intraocular lens and anterior chamber intraocular lens equally effective.

Keywords: Anterior chamber intraocular lens, Anisometropia, Scleral fixated intraocular lens.

INTRODUCTION

Fixation of intraocular lenses in cases of insufficient or no capsular support is challenging and requires good surgical techniques to resolve different situations.[1] In such a situation, the surgeon has four options, to leave the eye aphakic, to implant an anterior chamber intraocular lens (AC IOL), to fixate a posterior chamber intraocular lens (PC IOL) in the iris or to fixate a PC IOL in the sclera. The potential issues of anisometropia, optical aberrations, and contact lens intolerance make aphakia a less-than-optimal solution in all but a few patients.[2]

Presently, there are five primary methods for dealing with IOL requirements in the absence of capsular support, mainly depending on the preoperative status of the eye: flexible openloop ACIOLs and iris claw ACIOLs; iris-fixated retropupillary ACIOLs; iris-sutured PCIOLs and transscleral – sutured PCIOLs. If both the iris and the capsule are absent or disrupted, sutured transscleral PCIOLs are the only option.[3]

Each of these IOL has its own advantages and disadvantages. ACIOL is technically less demanding but has potential for increased damage to the corneal endothelium and the angle structures. Iris claw and iris fixated IOLs have increased chances of pigment release and intraocular inflammation. Sutured SFIOL implantation is technically more demanding and can have problems like pseudophacodonesis and suture related complications like suture knot exposure, suture breakage and IOL subluxation.4 The present study was conducted to assess visual outcome and complications between scleral fixated intraocular lens and anterior chamber intraocular lens.

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MATERIALS AND METHODS

The present study was conducted in the department of Ophthalmology. It comprised of 82 patients requiring eye surgery of both genders. The study protocol was approved from institutional ethical committee. All subjects were informed regarding the study and written consent was obtained.

Data such as name, age, gender etc. was recorded. Patients were classified into 2 groups. Group I patients underwent anterior chamber IOLs (ACIOLs) implantation either primary or secondary and group II patients underwent scleral fixated IOLs (SFIOLs) implantation either primary or secondary. In both groups, the pre and post-operative visual acuity was measured. Results thus obtained were

subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table 1: Distribution of patients

Groups	Group I (ACIOLs)	Group II (SFIOLs)
Number	41	41

[Table 1] shows that patients were classified into 2 groups. Group I (41) patients underwent anterior chamber IOLs (ACIOLs) implantation and group II (41) patients underwent scleral fixated IOLs (SFIOLs) implantation.

Table 2: BCV A preoperatively and postoperatively in both groups

BCV A	Groups	Pre-operative	After 3 months
6/6- 6/9	Group I	9	2
	Group II	6	3
	P value	0.5	1
6/12- 6/18	Group I	20	24
	Group II	21	22
	P value	0.93	0.91
6/60 and worse	Group I	12	15
	Group II	14	16
	P value	0.12	1

[Table 2 & Figure 2] shows that there was more improvement in BCV A score in patients with 6/12- 6/18 eye sight in both groups followed by patients with 6/60 and worse eye sight in both groups, whereas in patients with 6/6- 6/9 less improvement was observed in both groups (P> 0.05).

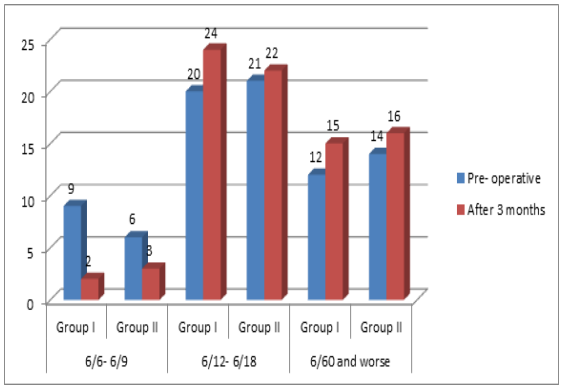

Figure 2: BCV A preoperatively and postoperatively in both groups

DISCUSSION

Anterior chamber intra-ocular lens implantation is coming back into favor among some surgeons, thanks to improved, open loop ACIOL designs and re-emergence of the iris fixated claw IOL.[5] Sizing is less critical with the flexible haptics of the open-loop ACIOLs; as opposed to the more rigid or closed-loop ACIOL designs.[6] Several studies demonstrated improved results with these modern devices. Nevertheless, concern remains that ACIOLs are more damaging to the corneal endothelium than PCIOLs. The modern ACIOL designs had decreased the complications which were associated with the closed-loop ACIOLs but they have not been eliminated.[7] The present study was conducted to assess visual outcome and complications between scleral fixated intraocular lens and anterior chamber intraocular lens.

In present study, patients were classified into 2 groups. Group I (41) patients underwent anterior chamber IOLs (ACIOLs) implantation and group II (41) patients underwent scleral fixated IOLs (SFIOLs) implantation. We found that there was more improvement in BCV A score in patients with 6/12- 6/18 eye sight in both groups followed by patients with 6/60 and worse eye sight in both groups, whereas in patients with 6/6- 6/9 less improvement was observed in both groups (P> 0.05). Sujata et al,[8] found that there was no statistically significant difference noted between the two groups after six months. BCVA 6/6 – 6/9 in 25% preoperatively improved to 56.25% in group – I after six months postoperatively while in group-II it improved from 31.25% to 56%. Complications rate was analyzed, corneal astigmatism > 1 diopter was noted 31.25% in group – I and 25% in group – II. Hyphaema / vitreous hemorrhage was 18.75%, IOL decentration was 12.50% in group – II, but no case recorded in group – I.

Ahmad et al,[9] found that of 62 eyes who completed 1 month follow up, 48 were men and 14 women. There was a significant improvement in uncorrected distance visual acuity after surgery (p<0.001). One month postoperative best corrected distance visual acuity was 6/18 or better in 45 eyes (72.6%). The common early postoperative complications were hypotony, corneal edema. No serious complications such as endophthalmitis and retinal detachment were seen.

Ellakwa et al,[10] recorded better results from primary AC vs primary sclera – fixated IOLs in eyes with poor capsular support, log MAR visual acuity averaged 0.322 in eyes that received an anterior chamber IOL, significantly better than the sclera – fixated IOL group, which had a mean visual acuity of 0.486 (P = 0.01). In the anterior chamber IOL group, 71% of eyes achieved a Snellen visual acuity of 20/40 or better compared with 47.2% of eyes in the scleral fixated IOL group, in our study no statistically significant difference was found between primary AC vs. primary scleral – fixated IOLs. Spontaneous dislocation of sutureless SFIOL was reported in 3.17%. Complications of IOL tilt and dislocation ranged from 2.9% to as high as 23% in sutured SFIOL studies.

CONCLUSION

Authors found both scleral fixated intraocular lens and anterior chamber intraocular lens equally effective.

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