

Visual outcome and Complications of Retropupillary IRIS-Claw Intraocular Lenses in an Eye Care Facility in South-East Nigeria.

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Introduction: Cataract is the leading cause of blindness globally and in Nigeria accounting for up to 43% of blindness in the country^[1]. Aphakia is a significant cause of severe visual impairment in Sub-Saharan Africa., particularly Nigeria^[2]. In Nigeria, it is the third leading cause of blindness by the Nigeria National blindness survey^[3]. The study aims to assess the efficacy of retropupillary iris-claw intraocular (ICIOL) lens in the management of aphakia in an eye care facility located in South-East Nigeria; its complications, identify the causes and make recommendations. **Methods:** This was a retrospective chart review of consecutive patients who had iris-claw intraocular lens between January 2012 and January 2016 at The Eye Specialists Hospital, Enugu, South- East Nigeria. Primary outcomes of interest were visual outcome postoperatively as well as observed complications after the procedure. Relevant demographics, pre- and post-operative data comprising visual acuity, intra- and post- operative complications, indications for surgery, were collected, evaluations were made.

The post-operative ocular examination and assessment of complications was performed by an ophthalmologist (the operating surgeon), while the visual acuity measurements and ancillary tests such as intraocular pressure measurements were carried out by an ophthalmic nurse. Surgery involving insertion of the ICIOL was carried out by two surgeons in the facility. Inclusion criteria were follow-up period up of at least 6 months and availability of complete chart data for collection. Data was analysed by the IBM Statistical Package for Social Sciences (SPSS) version 22.

Results: Twelve eyes of 10 patients were included in the study. They were made up of 5 males and 5 females with a mean age of 65.1 years (Range: 35-100 years, S.D:17.578). Mean follow up duration was 7.8months (range 6 months to 18 months). Indications for ICIOL in order of decreasing frequency were surgical aphakia in 4 eyes (33.3%), intraoperative posterior capsular rent in 3 eyes (25%), lens subluxation in 2 eyes (16.7%), and couching in 2 eyes (16.7%) and intraocular lens exchange in 1 eye (8.3%). Pre-operative co-morbidities were age-related macular degeneration in 1 eye (8.3%), pseudophakic bullous keratopathy in 1 eye (8.3%), mild corneal dystrophy in 1 eye (8.3%), 2 participants had more than one co-morbidity diabetic macular oedema and epiretinal membrane in 1 eye; maculopathy and retinal thickening in the 2nd eye. All eyes pre-operatively had severe visual impairment <6/60. 6 months post-operatively, best-corrected visual acuity (BCVA) was 6/12 (0.3 LogMAR) or better in 6 eyes (50%); 6/18 – 6/60 (between 0.48 and

Table 1: Best corrected visual acuity pre and post operatively within groups

	N	Preoperative BCVA			Postoperative BCVA		
		Mean	Median	S.D	Mean	Median	SD
All	12	1.78	1.70	0.19	0.81	0.39	0.81
OCM group	5	1.82	1.70	0.27	1.39	1.70	0.75
No OCM group	7	1.74	1.70	0.11	0.39	0.18	0.59

Table 2: Demographics of participants with BCVA worse than 6/60

Age/Sex	Indications	CO-Morbordities	PRE-OP VA	VA 6MTH	Complications
73/Male	Intraoperative *PCR	DME/ERM	CF 2m	CF 3m	
71/Female	Intraoperative PCR	None	CF 2m	CF 2m	Vitritis
100/Male	Intraoperative PCR	ARMD	PL	PL	
67/Female	IOL exchange	Bullous Keratopathy	CF 4m	CF 2m	Subluxated ICIOL

1.0 LogMAR) was seen in 2 eyes (16.7%) while 4 eyes had BCVA of worse than 6/60 (1.0 LogMAR) was seen in four eyes (33.3%), see Table 2. Post-operative complications seen were cystoid macular oedema in 1 eye, subluxated ICIOL in 1 eye and vitritis in 1 eye.

Discussion: Generally, in this study, there was an improvement in visual outcome in 8 eyes, (66.7%) at 6 months while visual acuity (VA) worse than 6/60 was observed in 4 eyes (33.3%) 3 of which had ocular co-morbidities). This percentage finding of improved VA was slightly lower than that of Schallenberg *et al*^[4] in Germany who looked at the long-term outcome of retropupillary ICIOL implantation where visual acuity improved in approximately 71% of the participants. Using the LogMAR scale, the best mean corrected distance visual acuity (BCVA) postoperatively (1.78 ± 0.54 (SE) logMAR) was significantly better than preoperatively (0.81 ± 0.23 logMAR) ($P=0.001$). Complications noted in our study were cystoid macular oedema, subluxation of the ICIOL and vitritis, each occurring in 1 eye. De Silva *et al* also noted iris claw lens subluxation in 6% of eyes post-

operatively^[5]; cystoid macular oedema is an important complication which cuts across all procedures without posterior chamber support, whether ICIOL or Scleral fixated Intraocular lens (SFIOL) or Anterior chamber intraocular lens (ACIOL). Poor visual outcome after insertion of the iris claw lens in this study was related to existence of ocular co-morbidities pre-operatively. This is similar to findings of Gonnerman, that visual outcome with retrofixated ICIOL, when combined with other intraocular procedures is mainly affected by the complexity of co-existing pathologies^[6]. Limitations of this study include small sample size and short follow-up time.

Conclusion: The visual outcome of iris claw intraocular lens in this study group was good in aphakic eyes without other ocular pathologies. The complications were also minimal. Retro-pupillary iris claw intra-ocular lens implantation therefore promises to be a viable alternative for visual rehabilitation of aphakia.

References

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