

Outcomes of cataract surgery in rural population

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Abstract

Background: Objective: The objective of this study was to assess and to evaluate visual acuity outcomes after cataract surgery in a south Indian population. **Design:** This was a hospital based retrospective study. **Duration:** One year i.e. from January 2018 to December 2018. **Setting:** Government Medical College, Nizamabad. **Participants:** 100 patients who had undergone cataract surgery at, **Methods:** We audited the outcome of 100 cataract surgeries done from January 2018 to December 2018 at our setting. All patients received a comprehensive ophthalmic examination, both before and after surgery. The World Health Organization recommended cataract surgical record was used for data entry. Visual outcomes were measured at discharge and follow up visits. Poor outcome was defined as best corrected visual acuity <6/18. Data were presented in the form of statistical Tables and charts. SPSS software version 20 was used for statistical analysis. **Results:** The mean age of operated subjects was 61.9 years. Overall, 49.0% of those operated were women and 81% were illiterate. Intraoperative complications were seen in 9 eyes (6%). Good outcome (presenting VA 6/18 or better) was seen in 102 (68%) eyes. Uncorrected refractive error (51.1%) was the leading cause of visual impairment, and posterior segment disease (29.9%) was the leading cause of blindness. **Conclusion:** The visual outcome of cataract surgery was much better and it has been recognized that there is significant progression of visual acuity.

Key Words : Cataract, Rural, Eye, BCVA

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INTRODUCTION

Cataract, defined by the World Health Organization (WHO) as a visual acuity (VA) of less than 3/60 in the better eye, is the leading cause of blindness in the world. It affects approximately 20 million people, 90% of them in low- and middle-income countries. According to the latest assessment, cataract is responsible for 51% of world blindness. In India, 80% of the blindness is due to cataract. The aetio-pathogenesis behind cataract is Nuclear sclerosis which is the yellowing and hardening of the central portion of the crystalline lens and it occurs slowly

over years. As the core of the lens hardens, it often causes the lens to increase the refractive power and causes nearsightedness. Risk factors for cataract development include the following Diabetes or elevated blood sugar, Steroid use (oral, IV, or inhaled), Ultraviolet exposure, Smoking, Ocular diseases like Retinitis Pigmentosa, Uveitis and other factors. Age related is by far the most common type of cataract and it is divided into 3 types based on the anatomy of the human lens. There are Nuclear Sclerotic, Cortical and Posterior Sub-capsular Cataracts. Cataract surgery is one of the most common surgical procedures performed around the world. The goal in modern cataract surgery is not only the removal of the cataract, but also the replacement of the cataract with an intraocular lens (IOL). The IOL is typically placed during the cataract surgery, and may be placed in the capsular bag as a posterior chamber lens (PCIOL). The most common type of cataract surgery utilizes ultrasound energy to break the cataract into particles small enough to aspirate through a hand piece. This technique is referred to as Phaco-emulsification. Apart from the presence of cataract, outcomes of cataract surgery are also an issue in many locations in the world. Unlike hospital based

studies, numerous population based studies have shown wide variability in terms of post-operative visual outcomes, both within a country as well as between countries. There are also urban-rural differences seen. This variability in outcomes could be due to the quality of surgery or the surgical facility, surgeons' skills, post-operative use of spectacles or co-existing ocular comorbidities. The objective of this study was to assess and to evaluate visual acuity outcomes after cataract surgery in a south Indian population.

MATERIALS AND METHODS

Place Of Study: Government Medical College, Nizamabad.

Type Of Study: This was a hospital based retrospective study.

Sample Collection: Sample size : 100

Sampling Methods: Consecutive sampling.

Statistical Methods: Data were presented in the form of statistical Tables and charts. SPSS software version 20 was used for statistical analysis.

Ethical Approval: Approval was taken from the Institutional Ethics Committee prior to commencement of the study.

OBSERVATIONS AND RESULTS

Table 1: Ophthalmological Profile

Variables	N = 100 (%)
Age group (years)	
40-49	10 (10%)
50-59	20 (20%)
60-69	52 (52%)
> 70	18 (18%)
Gender	
Male	52 (52%)
Female	48 (48%)
Operated Eye	
Right	59 (59%)
Left	41 (41%)
Pre-operative BCVA*	
6/6-6/18	17 (17%)
6/24-6/60	23 (23%)
<6/60	60 (60%)
Lens Status of Fellow Eye	
Clear	2 (2%)
Opacity	4 (4%)
Operable Cataract	70 (70%)
Inoperable Cataract	1 (1%)
Aphakia	3 (3%)
Pseudophakia	20 (20%)
Preoperative Comorbidities in Eye undergoing surgery	
Normal	89 (89%)
Corneal scar	2 (2%)
Old iritis	2 (2%)
Retinal disease	4 (4%)
Glaucoma	1 (1%)
Other	2 (2%)

*BCVA = Best Corrected Visual Acuity

Table 1 shows the demographic details of the subjects stratified by age, gender, operated eye, lens status, preoperative comorbidities of patients undergoing eye surgery

Table 2: Surgical outcomes

Visual Acuity Categories	Pre-Operative Visual Acuity Of Operated Eyes	Post-Operative Visual Acuity Of Operated Eyes
	BCVA*	BCVA*
6/6-6/18	17 (17%)	86 (86%)
6/24-6/60	23 (23%)	8 (8%)
<6/60	60 (60%)	4 (4%)

**PVA = Presenting Visual Acuity; *BCVA = Best Corrected Visual Acuity

Table 2 shows the surgical outcomes of the patients by comparing pre and post operative visual acuity of operated eyes

RESULTS

The mean age of operated subjects was 61.9 years. Overall, 49.0% of those operated were women and 81% were illiterate. Intraoperative complications were seen in 9 eyes (6%). Good outcome (presenting VA 6/18 or better) was seen in 102 (68%) eyes. Uncorrected refractive error (51.1%) was the leading cause of visual impairment, and posterior segment disease (29.9%) was the leading cause of blindness. In the rural out of 100 patients, 52 were male and 48 were female subjects who had undergone cataract surgery. The prevalence of aphakia/pseudophakia was 3%. Table 2 shows the preoperative and postoperative visual acuity for the operated eyes. The majority of operations (60%) were performed on eyes with a preoperative visual acuity of <6/60 followed by 6/24 – 6/60 and 6/6 – 6/18. Postoperative outcome was good in 86% of eyes, borderline in 8%, and poor in 4%

DISCUSSION

This retrospective study focused on cataract surgery outcomes. Visual acuity tends to improve, based on PVA, there were 84% who had good outcome. Though the PVA was less than that recommended by WHO (90%), the BCVA was not within the WHO recommendation, i.e. 86% BCVA having good outcome and <4% having less than 6/60¹. The outcomes are similar to those reported by some ^{2,3and4} and better than others from developing countries ^{5,6}. A total of 100 patients presented to the hospital and met the inclusion criteria were recruited for the study and were examined preoperatively, 1st day postoperatively and 8th week postoperatively. The ages of the patients ranged from 40 to >70 years with a mean of 65.8± 8.46 years. There were 52 males (52%) and 48 females (48%). The preoperative evaluations including anterior segment slit lamp examination, dilated fundus examination, and biometry (keratometry and A-scan) were done. The level of both pre- and postoperative visual acuity was categorized using WHO classification as good visual acuity (6/6–6/18), borderline visual acuity (<6/18–6/60), and poor visual acuity (<6/60). It was measured using 6meter Snellen's vision chart. For those who could not read letters at 6meter, their vision was measured by moving the chart as close as possible. Finally, for those who could not see any letter, counting finger and hand motion were used to measure their vision. The postoperative evaluations were performed. Measures of outcome were classified as "good", "borderline" or "poor". "Good outcome" was defined as a visual acuity of 6/18 with the available correction; "borderline outcome" as 6/24 ± 6/60; and "poor outcome" as <6/60.

Table classified shows the preoperative and postoperative visual acuity for the operated eyes. The majority of operations (60%) were performed on eyes with a preoperative visual acuity of <6/60. Postoperative outcome was good in 86% of eyes, borderline in 8%, and poor in 4%. A similar research conducted in Ghana by Ilechie., *et al* ⁷. Visual outcome is likely to improve further when better correction for aphakia can be provided. Further assessment of the causes of poor visual outcome is needed. The visual outcome following cataract surgery could be monitored on a regular basis by ophthalmologists, which in itself is likely to improve the outcome of surgery.

CONCLUSIONS

In this study, the visual outcome of cataract surgery was much better, and it has been recognized that there is significant progression of visual acuity. Overall, the level of postoperative visual acuity in this study is significantly lower than the WHO8 guidelines⁹, which states that at least 90% of cataract-operated eyes should have a visual acuity of ≥6/18. This indicates that a large number of individuals had highly compromised vision-related quality of life and loss of productivity postoperatively.

REFERENCES

1. Limburg H, Foster A, Vaidyanathan K, Murthy GV (1999) Monitoring visual outcome of cataract surgery in India. Bull World Health Organ 77: 455–460. pmid:10427929
2. Gogate P, Vakil V, Khandekar R, Deshpande M, Limburg H (2011) Monitoring and modernization to improve visual outcomes of cataract surgery in a community eyecare center in western India. J Cataract Refract Surg 37: 328–334. pmid:21241917
3. Yorston D, Gichuhi S, Wood M, Foster A (2002) Does prospective monitoring improve cataract surgery outcomes in Africa? Br J Ophthalmol 86: 543–547. pmid:1197325
4. Egbert PR, Buchanan M (1991) Results of extracapsular cataract surgery and intraocular lens implantation in Ghana. Arch Ophthalmol 109: 1764–1768. pmid:1841592
5. Cook NJ (1996) Evaluation of high volume extracapsular cataract extraction with posterior chamber lens implantation in Sierra Leone, west Africa. Br J Ophthalmol 80: 698–701. pmid:8949712
6. Lai FH, Lok JY, Chow PP, Young AL (2014) Clinical outcomes of cataract surgery in very elderly adults. J Am Geriatr Soc 62: 165–170. pmid:24279708
7. Ilechie AA., *et al*. "Evaluation of post-operative visual outcomes of cataract surgery in Ghana". International Journal of Health Research 5.1 (2012): 35-42.
8. World Health Organization. *Informal Consultation on Analysis of Blindness Prevention Outcomes*. Geneva, Switzerland: WHO; 1988:/PBL/98.68.
9. Ramachandra Pararajasegaram. Importance of Monitoring Cataract Surgical Outcomes. Community Eye Health Journal. 2002;15(44):49–50.

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