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Original Research

Analysis of visual outcome among patients undergoing cataract surgery

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ABSTRACT:

BackgroundThe present study was conducted for assessing the visual outcome following cataract surgery. **Materials & methods:**In this study, a total of 100 patients diagnosed with cataracts as the primary cause of their visual impairment and scheduled for surgical intervention were included. The inclusion criteria specified that participants must have a visual acuity of less than 6/60 in the affected eye due to cataracts. Comprehensive demographic and clinical information was collected for all participants. An appropriate anesthetic was administered for each surgical procedure. The initial and optimal corrected vision of the operated eye was evaluated on the day of discharge and again six weeks post-surgery. Visual improvement was quantified using the method recommended by the World Health Organization for assessing postoperative visual outcomes. **Results:** A total of 100 participants were recruited for the study, with an average age of 48.3 years. Females constituted 62 percent of the cohort. Right eye involvement was observed in 63 percent of the participants. Among the subjects, 10 percent had diabetes, and 14 percent were diagnosed with hypertension. Notable findings emerged from the comparison of preoperative and postoperative visual acuity, with 74 percent of the patients achieving excellent outcomes. **Conclusion:**To improve outcomes, eye care staff should follow standard procedures: Promote cataract surgeries at an earlier age to optimize results. Provide thorough preoperative counseling to manage patient expectations, especially in cases with co-morbidities. This approach can enhance patient satisfaction and outcomes.

Key words: Cataract surgery, Visual

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Introduction

Cataract is the world's leading eye disease that causes blindness. The prevalence of cataract aged 40 years and older is approximately 11.8%-18.8%. Currently, surgery is the only way to treat cataracts.From early intracapsular cataract extraction to extracapsular cataract extraction, to current phacoemulsification cataract surgery, the incision ranges from 12 to 3 mm, and sometimes to even 1.8 mm or less, and the revolution in cataract surgery is ongoing. Cataract surgery has transformed from vision recovery to refractive surgery, leading to the era of refractive cataract surgery, and premium intraocular lenses (IOLs) such as toric IOLs, multifocal IOLs, and extended depth-of-focus IOLs are being increasingly used to meet the individual needs of patients.^{1- 3} With its advantages of providing better visual acuity and causing fewer complications, phacoemulsification is currently the mainstream cataract surgery technique worldwide. However, patient expectations for the safety and accuracy of the operation are continually increasing. Femtosecond laser-assisted cataract surgery (FLACS) has entered the public's field of vision. FLACS is a combination of new laser technology and artificial intelligence to replace fine manual clear corneal incision, capsulorhexis, and nuclear pre-fragmentation, providing new alternative technologies for patients and ophthalmologists. As FLACS matures, it is being increasingly applied in complex cases; however, some think it is not cost-effective. Although more than 26 million cataract surgeries are performed each year, there is still a gap in the prevalence of cataracts, especially in developing countries.⁴⁻⁶Hence; the present study was conducted for assessing the visual outcome following cataract surgery.

Materials & methods

The present study was conducted for assessing the visual outcome following cataract surgery. A total of 50 Patients having cataract as the principal cause for their visual impairment and scheduled for the surgery were enrolled in the present study. Inclusion criteria for the present study included patients having visual acuity less than 6/60 in eye due to cataract. Complete demographic and clinical details of all the patients was obtained. All the eyes were evaluated Bio-microscope, applanation tonometer and pan retinal indirect ophthalmoscope. Snellen's chart for far vision was used to assess the vision. Six weeks following surgery, optometrists used manual refraction to ascertain the optimal correction.

The ultrasound "A" scan was used to calculate the power of the lens that would be put in the eye. An appropriate anesthetic was used for each surgery. The presenting and the best possible corrected vision of operated eye was assessed on the day of discharge and after 6 weeks of surgery. The visual gain was measured using WHO recommended method of using post operative visual status. All the results were recorded in Microsoft excel sheet and were assessed using SPSS software. Chi-square test and student t test were used for evaluation of level of significance.

Results

A total of 100 participants were recruited for the study, with an average age of 48.3 years. Females constituted 62 percent of the cohort. Right eye involvement was observed in 63 percent of the participants. Among the subjects, 10 percent had diabetes, and 14 percent were diagnosed with hypertension. Notable findings emerged from the comparison of preoperative and postoperative visual acuity, with 74 percent of the patients achieving excellent outcomes.

Variable		Number of eyes	Percentage	
Mean age (years)		48.3 years		
Gender	Males	38	38	
	Females	62	62	
Laterality	Right	63	63	
	Left	37	37	

 Table 1: Profile of patients

Tuble 2. Comparison of Vision					
Vision	Preoperative vision	Postoperative vision	p-value		
6/60 to 6/18	0	22	0.001 (Significant)		
6/24 to 6/60	4	38			
Less than 6/60 to 3/60	12	10			
Less than 3/60	84	30			
Total	100	100			

Table 2. Comparison of vision

Table 3: Postoperative visual gain- Outcome

Outcome	Number	Percentage
Excellent	74	74
Good	24	24
Poor	2	2
Total	100	100

Discussion

Cataract surgery is the commonest single surgical procedure carried out in the developed world. In the developing world, cataract remains the commonest cause of blindness. In 1990 an estimated 37 million people were blind worldwide—40% of them because of cataract.¹ Every year, an extra 1-2 million people go blind. Every five seconds one person in our world goes blind, and a child goes blind every minute. In 75% of these cases the blindness is treatable or preventable.

However, 90% of blind people live in the poorest sections of the developing world, and without proper interventions the number of blind people will increase to 75 million by 2020.⁷⁻⁹Hence; the present study was conducted for assessing the visual outcome following cataract surgery.

A total of 100 participants were recruited for the study, with an average age of 48.3 years. Females constituted 62 percent of the cohort. Right eye involvement was observed in 63 percent of the participants. Among the subjects, 10 percent had diabetes, and 14 percent were diagnosed with hypertension. Notable findings emerged from the comparison of preoperative and postoperative visual acuity, with 74 percent of the patients achieving excellent outcomes. Markos CM et al conducted a prospective, longitudinal study of consecutive adult patients scheduled for cataract surgery. Three hundred fourteen eyes of 314 participants (mean age 64.16±8.83 SD, 52% females, 44% from rural location) were included in the study. Most, 283 (90.1%) had preoperative visual acuity less than 6/60. At final follow-up visit (6 to 8 weeks), best-corrected visual acuity (BCVA) was good (≥6/18) in 215 (68.5%), borderline (<6/18-6/60) in 63 (20.1%) and poor (<6/60) in 36 (11.5%) eyes. Age-related macular degeneration (AMD) [OR = 4.57, 95% CI [1.12–17.24], p=0.03] and preoperative astigmatism [OR = 3.22, 95% CI [1.25-8.33], p=0.01] were significantly associated with poor postoperative visual outcome. While the majority of patients had good postoperative BCVA following cataract surgery, the percentage of patients with poor visual outcomes was higher than the WHO standard.9 Lundström Met al analyzed the visual outcome after cataract surgery.Data were drawn from case series of cataract extractions reported to the European Registry of Quality Outcomes for Cataract and Refractive Surgery database. These data were entered into the database via the Web by surgeons or by transfer from existing national registries or electronic medical record systems. The database contains individual anonymous data on preoperative, intraoperative, and postoperative measurements.Data on 368,256 cataract extractions were available for analysis. The best visual outcome was achieved in age groups 40 to 74 years, and men showed a higher percentage of excellent vision (1.0 [20/20] or better) than women. A corrected distance visual acuity (CDVA) of 0.5 (20/40) or better and of 1.0 (20/20) or better was achieved in 94.3% and 61.3% of cases, respectively. Ocular comorbidity and postoperative complications were the strongest influences on the visual outcome; however, surgical complications and ocular changes requiring complex surgery also had a negative influence. Deterioration of visual acuity after the surgery (n = 6112 [1.7% of all cases]) was most common in patients with a good preoperative visual acuity. The visual outcomes of cataract surgery were excellent, with 61.3% of patients achieving a corrected distance visual acuity of 1.0 (20/20) or better. Age and sex influenced the visual outcomes, but the greatest influences were short-term postoperative complications, ocular comorbidity, surgical complications, and complex surgery. A weakness of the study could be that some of the data is self-reported to the registry.¹⁰

Conclusion

To improve outcomes, eye care staff should follow standard procedures:Promote cataract surgeries at an earlier age to optimize results.Provide thorough preoperative counseling to manage patient expectations, especially in cases with co-morbidities.This approach can enhance patient satisfaction and outcomes.

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