

Study of Evaluation of Prevalence of Cataract in Older Patients at a Tertiary Care Hospital

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ABSTRACT

Introduction: Background: The present study was conducted for evaluating the prevalence of cataract in older patients in a known area.

Materials & Methods: A total of 130 subjects were analyzed. Complete demographic and clinical details of all the subjects was analyzed. Thorough clinical examination of all the subjects was done. Detailed ocular history was obtained from all patients. All the subjects underwent a detailed ophthalmic assessment including visual acuity and spectacle refraction using modified Early Treatment Diabetic Retinopathy Study (ETDRS) chart, anterior segment examination, measurement of intraocular pressure and fundus examination. The examiner identified the specific lens opacity. Incidence of cataract was evaluated.

Results: Cataract was found to be present in 21.54 percent of the subjects. Among them, nuclear cataract, Cortical cataract, Posterior subcapsular cataract, Hypermature cataract and Mixed type of cataract was encountered in 7.69 percent, 4.62 percent, 3.85 percent, 3.08 percent, and 2.31 percent of the subjects. Advancing age, higher BMI, higher HbA1c and presence of diabetes were found to be significant risk factors for development of cataract.

Conclusion: High rates of cataract were encountered in subjects with higher age and among diabetic subjects. diseases.

KEYWORDS: Cataract, Lens.

INTRODUCTION

Cataracts are cloudy or opaque areas in the lens of the eye that can impair vision. Age-related cataracts are defined as occurring in people over 50 years of age, in the absence of known mechanical, chemical, or radiation trauma. Cataract accounts for over 47% of blindness worldwide, causing blindness in about 17.3 million people in 1990. Surgery for cataract in people with glaucoma may affect glaucoma control.¹⁻³ Opacity or cloudiness of the eye lens, the optical basis of cataract results when the refractive index within the lens varies significantly over distances approximating the wavelength of the transmitted light. Lens transparency requires both the orderly arrangement of lens cells and the high density and close packing of their protein constituents, primarily the lens crystallins. Variation in the refractive index and hence light scattering can result from changes in lens microarchitecture, the protein constituents, or both.⁴ 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. In the past, a combination of relatively crude surgical techniques and poor visual rehabilitation afterwards meant that cataracts were left until they were very advanced before surgery was undertaken.^{5,6} Hence; the present study was conducted for evaluating the prevalence of cataract in older patients in a known area.

MATERIALS & METHODS

The present study was conducted in the Department of Ophthalmology, SVS Medical College, Mahabubnagar, Telangana (India) for evaluating the prevalence of cataract in older patients. A total of 130 subjects were analyzed. Complete demographic and clinical details of all the subjects were analyzed. Thorough clinical examination of all the subjects was done. Detailed ocular history was obtained from all patients.

All the subjects underwent a detailed ophthalmic assessment including visual acuity and spectacle refraction using modified Early Treatment Diabetic Retinopathy Study (ETDRS) chart, anterior segment examination, measurement of intraocular pressure and fundus examination. The examiner identified the specific lens opacity. Incidence of cataract was evaluated. All the results were recorded in Microsoft excel sheet and were subjected to statistical analysis using SPSS software. Chi-square test and student t test were used for evaluation of level of significance.

RESULTS

A total of 130 subjects were analyzed. Among them, cataract was found to be present in 21.54 percent of the subjects.

Among them, nuclear cataract, Cortical cataract, Posterior subcapsular cataract, Hypermature cataract and Mixed type of cataract was encountered in 7.69 percent, 4.62 percent, 3.85 percent, 3.08 percent, and 2.31 percent of the subjects. Advancing age, higher BMI, higher HbA1c and presence of diabetes were found to be significant risk factors for development of cataract.

Table 1: Incidence and type of cataract

Cataract		Number	Percentage
Absent		102	78.46
Present	Nuclear cataract	10	7.69
	Cortical cataract	6	4.62
	Posterior subcapsular cataract	5	3.85
	Hypermature cataract	4	3.08
	Mixed	3	2.31
Total		130	100

Table 2: Risk factors

Variable	No cataract (n=102)	Any cataract (28)	p-value
Mean age (years)	53.3	61.8	0.001 (Significant)
Gender	Male (n)	15	0.745
	Females (n)	13	
Mean BMI (Kg/m ²)	25.1	27.3	0.027 (Significant)
Mean HbA1c (%)	6.1	7.5	0.042 (Significant)
Diabetes (n)	35/102	20/28	0.031 (Significant)

DISCUSSION

An estimated 95 million people worldwide are affected by cataract. Cataract still remains the leading cause of blindness in middle-income and low-income countries. With the advancement of surgical technology and techniques, cataract surgery has evolved to small-incisional surgery with rapid visual recovery, good visual outcomes, and minimal complications in most patients. With the development of advanced technology in intraocular lenses, the combined treatment of cataract and astigmatism or presbyopia, or both, is possible.^{7,8} When a cataract becomes visually significant, cataract surgery is the only established method of treatment. The definition of “visually significant” has evolved over time, to its current meaning of a visual acuity of 20/40 or worse. When cataract surgery was in its infancy, a “visually significant” cataract was likely used to describe an advanced or mature cataract, with vision impairment approaching blindness.⁹

Cataract surgery is safe and effective. 84–94% of eyes achieve best-corrected visual acuity of 20/30 (6/9) or better at 6 months after surgery. Comparisons of the visual outcomes among different surgical procedures are shown in the appendix. Studies reporting the 10-year and 15-year outcomes of cataract surgery have also documented good long-term visual rehabilitation for most patients.¹⁰⁻¹² Hence; the present study was conducted for evaluating the prevalence of cataract in older patients in a known area.

A total of 130 subjects were analyzed. Among them, cataract was found to be present in 21.54 percent of the subjects. Among them, nuclear cataract, Cortical cataract, Posterior subcapsular cataract, Hypermature cataract and Mixed type of cataract was encountered in 7.69 percent, 4.62 percent, 3.85 percent, 3.08 percent, and 2.31 percent of the subjects. Advancing age, higher BMI, higher HbA1c and presence of diabetes were found

to be significant risk factors for development of cataract. In a similar study conducted by Vashist P et al, authors described the prevalence of cataract in older people in 2 areas of north and south India. The prevalence of unoperated cataract in people aged ≥ 60 was 58% in north India and 53% in south India.¹³

In developing countries, cataract accounts for 50% of blindness, while in developed countries, it accounts for only 5% of blindness. In a study done in rural China, the prevalence of posterior subcapsular cataract was found to be 4.4%. In Indonesia, the prevalence of blindness due to cataract was 0.78%. In India, cataract was responsible for causing blindness in 0.73% of the population. In Pakistan, cataract is causing bilateral blindness in 1.75% of the population. In many African countries, cataract is the leading cause of blindness. In a study done in Nigeria, cataract is responsible for causing 44.2% of the total blindness.¹⁴⁻¹⁸ With financial support from the World Bank, India is launching a new, long-term project to increase service standards and the capacity of cataract surgery. This initiative's focus on extending the cataract blindness program to rural and tribal regions is a key component. To significantly raise the demand for cataract services, the most important technique is to conduct extensive campaigns against cataract blindness at the state and federal levels. Given that many social, economic, and environmental factors contribute to cataract blindness in populations at relatively earlier ages, a country like India has greater need for such a plan.¹⁹

CONCLUSION

High rates of cataract were encountered in subjects with higher age and among diabetic subjects.

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