

Original Research Article

A study of clinical and ophthalmologic profile of patients undergoing cataract surgery

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ABSTRACT

Background: Intraocular lens implantation is the only surgical approach available mostly in developing countries. Thus cataract constitutes as the leading cause of blindness in developing countries as many patients with cataract do not have access to hospitals and surgery. Objective was to study the clinical and ophthalmologic profile of patients undergoing cataract surgery.

Methods: A hospital based cross sectional study was carried out among 100 cataract patients assigned to undergo conventional extra capsular cataract excision surgery for a period of two years in a tertiary care referral hospital. One day before the surgery these patients were admitted to the indoor wards of department of ophthalmology. From each patient, detailed history was obtained. Visual acuity was checked with Snellen's visual acuity chart and pinhole improvement was noted.

Results: Maximum prevalence was seen in the age group of 51-60 years i.e. 37% followed by 61-70 years of 30%. Thus cataract is seen more commonly in the age group of above 50 years. Prevalence of cataract was more in females (59%) as compared to 41% in males. Cortical cataract constituted 86% of total cases and remaining 14% were constituted by nuclear type of cataract. Majority of the patients i.e. 59% had visual acuity of less than 1/60 followed by 33% of having 5/60 to 1/60. 58% of the patients had against the rule type of astigmatism. 34% of the patients had with the rule type of astigmatism. Only 8% had NOA type of astigmatism.

Conclusions: Increasing age and female gender were the most important risk factors in the present study. Cortical type of cataract was more common than nuclear type of cataract. Maximum had low vision.

Keywords: Astigmatism, Cataract, Cortical cataract, Low vision, Nuclear cataract

INTRODUCTION

Almost 20% of the blindness cases are seen in India and among these total cases of blindness, cataract is the most common cause of blindness. This is due to high prevalence of cataract cases. Compared to prevalence of cataract in Western countries, the prevalence of cataract in India is more. Genetic factors, environmental factors and nutritional factors are considered as important risk factors for cataract.¹

The important cause of age related cataract is gradual opacification of ocular lens and this can lead to loss of vision. As the person grows older this becomes a major problem for most of them. Intraocular lens implantation is the only surgical approach available mostly in developing countries. Thus cataract constitutes as the leading cause of blindness in developing countries as many patients with cataract do not have access to hospitals and surgery.²

Thus the major cause of blindness in many third world countries is cataract. This can be attributed to lack of access for surgery of cataract. In addition to this, environmental risk factors like lack of proper diet, constant exposure to sunlight in their occupation, as well as biomass fuel use are important. Genetic factors as risk factors for cataract are also important. Populations of Asia reveal higher prevalence of cataract compared to their Western counterpart.³

In absolute terms and numbers, it is estimated by World Health Organization that nearly 20 million persons in Asia are blind. And this is going to increase over the period of time. A series of studies have described the problem statement in Western countries, but such kind of data is lacking in Asian countries. In recent past, some proper, scientific studies have been conducted in Asian continent.⁴

Study of profile of cataract gives us idea about age, sex distribution of cataract. Hence present study was carried out to study the profile of patients with cataract.

METHODS

Study design

It was a hospital based cross sectional study. 100 cataract patients were assigned to undergo conventional extra capsular cataract excision surgery for a period of two years in a tertiary care referral hospital.

Ethical consideration

Institutional Ethics Committee permission was taken. Also the informed consent was obtained from each patient.

One day before the surgery these patients were admitted to the indoor wards of department of ophthalmology. From each patient, detailed history was obtained. Visual acuity was checked with Snellen's visual acuity chart and pinhole improvement was noted.

Cataract patients above 40 years were included in this study. Pediatric cataract, traumatic cataract, complicated cataract, cataract associated with glaucoma and cases with corneal disorders were excluded.

History of each patient included age, sex etc. Type of cataract determined was either as nuclear cataract or cortical cataract. Astigmatism was also classified. Data was tabulated in the form of tables. The results were expressed in percentages.

RESULTS

Table 1 shows distribution of study subjects as per their age. Maximum prevalence was seen in the age group of 51-60 years i.e. 37% followed by 61-70 years of 30%.

Thus cataract is seen more commonly in the age group of above 50 years. The mean age was found to be 58.4 years. 40-50 years also showed a prevalence of 26%. 71-80 years persons had only 7% of prevalence. This may be due to the fact few may be surviving above the age of 70 years.

Table 1: Distribution of study subjects as per their age.

Age in years	Number	Percentage
40-50	26	26
51-60	37	37
61-70	30	30
71-80	07	07
Total	100	100
Mean age	58.4±10	

Table 2: Distribution of study subjects as per their sex.

Sex	Number	Percentage
Male	41	41
Female	59	59
Total	100	100

Table 2 shows the prevalence of cataract as per the sex. The prevalence of cataract was more in females (59%) as compared to 41% in males. Thus females seem to be more affected. This may be due to the gender specific preference of treatment towards males in the society even today.

Table 3: Distribution of study subjects as per their type of cataract.

Type of cataract	Sub type	Number	Percentage
Nuclear	Mature	07	07
	Immature	07	07
Cortical	Mature	19	19
	Immature	58	58
	Hyper mature	05	05
	Posterior sub capsular	04	04

Table 3 shows the prevalence of different types of cataract. Cortical cataract constituted 86% of total cases and remaining 14% were constituted by nuclear type of cataract. Immature cataract was the most common in both types of cataract. In nuclear type of cataract, mature and immature types constituted equal number of cases. But in cortical type of cataract, immature type of cataract constituted 58% of cases, posterior sub capsular cataract constituted 4% of cases. Majority of the patients i.e. 59% had visual acuity of less than 1/60 followed by 33% of having 5/60 to 1/60. Thus majority of the patients were blind. 17% had visual acuity 6/24 to 6/60. Only one patient had visual acuity of less than 6/24 (Table 4).

Table 4: Distribution of study subjects as per their visual acuity.

Visual acuity	Number	Percentage
<6/24	01	01
6/24-6/60	17	17
5/60-1/60	33	33
<1/60	59	59
Total	100	100

Table 5: Distribution of study subjects as per their presence of astigmatism.

Type of astigmatism	Number	Percentage
ATR	58	58
WTR	34	34
NOA	08	08

58% of the patients had against the rule type of astigmatism. 34% of the patients had with the rule type of astigmatism. Only 8% had NOA type of astigmatism.

DISCUSSION

Maximum prevalence was seen in the age group of 51-60 years i.e. 37% followed by 61-70 years of 30%. Thus cataract is seen more commonly in the age group of above 50 years. Prevalence of cataract was more in females (59%) as compared to 41% in males. Cortical cataract constituted 86% of total cases and remaining 14% were constituted by nuclear type of cataract. Majority of the patients i.e. 59% had visual acuity of less than 1/60 followed by 33% of having 5/60 to 1/60. 58% of the patients had against the rule type of astigmatism. 34% of the patients had with the rule type of astigmatism. Only 8% had NOA type of astigmatism.

Murthy GV et al observed that nuclear opacity was the most common opacity.⁵This constituted 56.9% prevalence. 20.6% of the patients were found to have sub capsular type of opacity. 21.6% of the patients had cortical opacity. Similar to present study, this study also showed higher prevalence among women as compared to men. The authors found that the prevalence increased with increasing age which agrees with the findings of the present study.

Nirmalan PK et al found a prevalence of 47.5% of cataract.⁶They noted that the prevalence of cataract was low in males, and this is similar to the findings of the present study. They found that nuclear cataract was more common as compared to cortical cataract in their study. But the present study found that cortical cataract was more common, which is exactly opposite to the author findings. Husain R et al found a prevalence of 21.9% of cataract. 23% was the age adjusted cataract prevalence.⁷ Similar to the findings of the present study, author also found that the prevalence of cataract increased with increasing age. They observed that the men had lower

prevalence of cataract than females. This is in agreement with the present study findings. They stated that as the literacy levels decreased, the prevalence of cataract increased significantly. This may be due to negligence and ignorance among the illiterates.

Seah SK et al found that the cataract surgery prevalence was 5.1%.⁸They observed that the prevalence was similar for males and females. But we found that the prevalence was more in females as compared to males. They observed that nuclear type of cataract was present in 22.6% of cases whereas the cortical type of cataract was present in 23.9% of cases. Thus they reported similar rates for two types of cataract. But we found that the cortical type of cataract was more common than nuclear type of cataract. The author has found that as the age increased the prevalence of cataract also increased. This agrees with the findings of the present study. The authors stated that they found a more prevalence of cataract after home visits as compared to clinic based prevalence. Thus it signifies that many do not turn out to hospitals for early diagnosis and treatment. Hence this is the most common reason of increased prevalence in developing countries as people do not turn out to hospitals.

Xu L et al found low rates of 1.3% of cataract surgery.⁹ They did not find any significant difference between the sexes, rural or urban residence and differences in the literacy levels. They found that nuclear type of cataract prevalence was 82% as compared to only 10.3% of cortical type of cataract. But we found that cortical type of cataract was more common than nuclear type of cataract.

McCarty CA et al found in their multivariate logistic regression analysis that age, female sex, duration of diabetes mellitus more than five years, more than 10 years of duration of gout, presence of arthritis, presence of myopia, patients using oral beta blockers as well as more exposure to ultraviolet B were the important risk factors for development of cataract.¹⁰ We also found that increasing age and females sex as showing the more prevalence of cataract. They found that age, rural residence, thiazide diuretics use were the risk factors for posterior sub capsular cataract.

Lee AJ et al found that pterygium was the risk factor for dry eye.¹¹ As well as history of smoking of cigarette was also a risk factor for dry eye.

Gupta SK et al observed that in 28.8% of cases the fundus cannot be graded due to the presence of cataract.¹²Among these cases which could not be graded 34% had soft Drusen. He found that the prevalence of late stage AMD was 1.4%.

Krishnaiah S et al in their study found that cataract prevalence increased with the increasing age.¹³ This is in agreement with the present study. They also found that previous history of cataract surgery was associated with

the present increased prevalence. They also observed in their multivariate analysis that illiteracy, being a female and cigarette smoking, low social class were the significant risk factors for cataract. We also found that prevalence of cataract was more in females as compared to males. They also studied and found that as the number of cigarette smoked increased, the prevalence of cataract also increased.

Congdon N et al found a prevalence of 17.2% among Americans of age more than 40 years.¹⁴ They also observed that the prevalence of cataract was more in females. We also found the similar results. They estimated that by 2020, around 30.1 million will have cataract.

Hsu WM et al found a mean age of 72.2 years. We found a mean age of 54.8 years.¹⁵ They found a lower rate of blindness compared to the present study. They did not report any difference of prevalence of cataract among the sexes. But we found that prevalence of cataract was more in females as compared to males.

Tsai SY et al found a prevalence of 59.2% of cataract.¹⁶ Similar to the present study results, they found a higher prevalence of cataract among women than men. They also noted that as the age increased, the prevalence of cataract increased. We also found that as the age increased, the prevalence of cataract increased. They found that after logistic regression analysis, increasing age and being a female were the most important risk factors for cataract. They also found that high blood pressure, smoking of cigarette, being a diabetic increased the risk of cataract.

CONCLUSION

Increasing age and female gender were the most important risk factors in the present study. Cortical type of cataract was more common than nuclear type of cataract. Maximum had low vision.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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