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Original Research Article

A Study on Prevalence of Cataract and the Importance of Cataract Surgery at Tertiary Care Hospital

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Abstract: Cataract is the leading cause of visual impairment and blindness worldwide, accounting for more than 50% of the blindness cases. The major barriers to cataract surgery include cost, lack of knowledge about cataract, lack of transport and/or felt need. Outcomes of cataract surgery are generally good and improvement in vision after cataract surgery is a rule in most case. Investigate the prevalence and vision-related outcomes of cataract surgery in a private medical college hospital. 121 patients were subjected to a cross sectional study by systematic random sampling with the participants of study being patients with cataract coming to the ophthalmology OPD. The prevalence of cataract among the patients attending ophthalmology OPD is 19.87%. The age based study shows that the prevalence of cataract increases with age. It is clear from the study that the visual acuity improves greatly with the cataract surgery. The most common post-operative complications being astigmatism and posterior capsular opacification.
Keywords: Cataract, prevalence, vision

INTRODUCTION:

Cataract is the leading cause of visual impairment and blindness worldwide, accounting for more than 50% of the blindness cases [1]. Population based surveys among older populations have shown that cataract is the predominant cause of severe visual impairment/blindness in India [2]. In response to this cataract blindness burden, the Government of India negotiated with the World Bank a special project for the elimination of cataract blindness in 1994. The annual number of cataract surgeries in India increased from 1.2 million in 1990 to 4.8 million in 2006 [2]. The major barriers to cataract surgery include cost, lack of knowledge about cataract, lack of transport and/or felt need [1].

Cataract is likely to burden health care systems as the world's population ages due to increasing life expectancy [1]. Cataract is caused by the degeneration and opacification of the lens fibers already formed the formation of aberrant lens fibers or deposition of other material in their place [3]. Epidemiological studies have established certain risk factors for cataract formation, particularly age, exposure to UV-B radiation, cigarette smoking, diabetes, severe diarrhoea and malnutrition, lower socioeconomic status, lower education, and occupation[1]. Outcomes of cataract surgery are

generally good and improvement in vision after cataract surgery is a rule in most case.

OBJECTIVE:

1. To find the prevalence of cataract on the basis of various aspects such as age group, sex and literacy.
2. To prove cataract surgery improves the vision in patients.
3. To detect the prevalence of post-operative complications during follow up after the surgery.

METHODOLOGY:

The study design used for this study is cross sectional study and the study period is from May 2016 to April 2017. The study was done at Sree Mookambika Institute of Medical Sciences, Kulasekharam and done by the Department of Ophthalmology. The sampling technique used is systematic random sampling.

Inclusion criteria: Patients with cataract coming to the ophthalmology OPD.

Exclusion criteria: Patients not willing for study and patients with causes of blindness other than cataract.

Sample size: $4PQ/d^2=121$ [1]

Data was entered in MS Excel 2016 and Statistical analysis was done using SPSS trial version 20.

Institutional Ethical committee clearance obtained.

RESULTS:

1. Total prevalence of cataract – 19.87%
2. Prevalence of cataract among different age groups
   - <49 years – 10.4%
   - 50-59 yrs – 12.2%
   - 60-69 yrs – 28.56%
   - >69 years – 49.13%
3. Prevalence of cataract based on literacy
   - Illiterates – 52.7%
   - Literates – 47.3%
4. Prevalence of cataract based on sex
   - Males – 41.4%
   - Females – 58.6%
5. Prevalence of cataract based on locality
   - Urban – 27.15%
   - Rural – 72.85%
6. Diabetes in patients with cataract – 8.44%
7. Hypertension in patients with cataract – 22.73%
8. Different types of cataract:
   - Nuclear cataract: 46.67%
   - Posterior sub capsular cataract: 19.67%
   - Cortical type: 5%
   - Mixed type: 29.3%
9. Visual Acuity:
10. PCO after cataract surgery : 11.23%
11. Corneal diseases after cataract surgery: 4.27%
12. Astigmatism after cataract surgery:49.53%
13. Macular Disease after cataract surgery:3.3%
14. Glaucoma after cataract surgery:2.97%
15. Diabetic Retinopathy after cataract surgery:0.83%

	Pre op	Post op
6/6 - 6/18	0	83.07
6/18 - 6/60	3.77	13.7
6/60 - 3/60	11.07	1.6
3/60 – NLP	85.14	1.64

DISCUSSION:

The prevalence of cataract among the study group is 19.8% which is comparably similar to the prevalence rates of the GVS Murthy *et al.;* [2] (17.6%) and Eye disease research group study (17.2%). The prevalence of cataract according to this study is more among females with 58.6% among the patients with cataract were females while 41.4% were males, its 55.87% of females and 44.13% males in GVS Murthy *et al.;* [2] and 56.61% of females and 43.29% males in Sobti *et al.;* [7].

The percentage of patients with cataract increases with increase in age group with 10.4% are less than 49 years of age while its 12.2%,28.56%,49.13% in the age groups of 50-59yrs,60-69yrs and >70yrs respectively. 50.2 The rates in GVS Murthy *et al.;* [2] is 21.5%, 6.5%, 22.5%,50.2% in the age groups <49 yrs,50-59yrs,60-69yrs and >70yrs respectively, rates in Sobti *et al.;* [7] is 8.08%, 22.05%, 25.73%, 44.1% in the age groups <49 yrs,50-59yrs,60-69yrs and >70yrs respectively The study also shows that the rates are higher among the illiterates than the literates its 52.7% among the illiterates and 47.3% among the literates the rates in Sobti *et al.;* [7] shows that its 65.44% among the illiterates and 34.56% among the literates.

Among the different types of cataract the common in this study in nuclear cataract (46.67%) and prevalence cortical cataract is 5%, mixed type is 29.3% and the rest is posterior sub capsular cataract. In the SEE project [5] the rates are 46%, 6.6%, 36.4%and

12.7% for nuclear cataract cortical cataract, mixed type and posterior sub capsular cataract respectively.

Prevalence of diabetes among those with cataract is 8.44%. Its 7.2% and 4.4% in the studies Bharath *et al.;* [6] and Kapoor *et al.;* [8] respectively. And about 22.73% of those with cataracts are hypertensive and the rates are 21.9% and 24.26% in the studies Bharath *et al.;* [6] and Kapoor *et al.;* [8] respectively. Visual Acuity after the surgery is improved much as which is in comparison with Kapoor *et al.;* [8].

Current study	Pre op	Post op
6/6 - 6/18	0	83.07
6/18 - 6/60	3.77	13.7
6/60 - 3/60	11.07	1.6
3/60 – NLP	85.14	1.64

Kapoor *et al.;* [8]	Pre op	Post op
6/6 - 6/18	0	79.9
6/18 - 6/60	0.3	15.8
6/60 - 3/60	4.9	1.4
3/60 – NLP	94.8	2.9

The prevalence of complications following cataract surgery after 8 weeks follow up, The prevalence of posterior capsular cataract is 11.23% and its 9.3% in Kapoor *et al.;* [8], and 7.9 in Gupta *et al.;* [1]. And occurrence of corneal disease is 4.27% which is 7.2% in Kapoor *et al.;* [8], and 3.9% in Gupta *et al.;* [1]. The prevalence of astigmatism is 49.53% in our study while it is 46% in Kapoor *et al.;* [8] and 45.5 in Murthy *et al.;* [2]. The percentage of patients developing macular diseases post operatively is 3.3% in the current study while it is 0.5% in Kapoor *et al.;* [8] and 3.0% in Gupta *et al.;* [1].

The occurrence of glaucoma post operatively in the study is 2.97% which is 4.4% in Gupta *et al.;* [1], and 4.3% in GVS Murthy *et al.;* [2]. The prevalence of worsening of Diabetic Retinopathy following cataract surgery is 0.83% in this study while its 0.5% in Kapoor *et al.;* [8], and 0.9% in Gupta *et al.;* [1].

CONCLUSION:

From the study it is learnt that the prevalence of cataract is more in females than males and the prevalence increases as the age increases. The common type of cataract by the study is nuclear cataract. The common post of complication is Astigmatism followed by posterior capsular opacification.

1. Limitations: This is a hospital based study and cannot be generalized.

Recommendations:

1. Study involving multiple medical college hospitals should be conducted.
2. Study should be conducted in general population.

CONFLICT OF INTEREST: NIL

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