

A Study of Profile of Patients with Cataract.

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ABSTRACT

Background: Cataract blindness is a public health problem of major proportions in developing countries. Intra capsular cataract extraction with aphakic spectacles has been the standard surgical technique for restoring sight. Cataracts, the world's leading cause of blindness, are an enormous public health problem in both developing and industrialized countries. **Objective:** To study clinical profile of patients with cataract. **Methods:** After applying inclusion and exclusion criteria as well as after ethical consideration only patients having cataract were included in the study. In this way, it was possible to include the 1000 patients over a period of two years. Present study was hospital based cross sectional study. A pre tested, semi structured questionnaire was used to collect the data. Complete detailed history was taken as per the questionnaire. Thorough clinical examination was carried out. The collected data was entered in Microsoft Excel Sheet and analyzed with the help of proportions. **Results:** The prevalence of cataract was highest in the age group of 51-60 years i.e. 45.1%. The most common prevalent type of cataract was found to be mature cataract in 50.5% of cases followed by hyper-mature cataract in 34.7% of cases. The overall incidence of capsular rupture was 4.7%. Highest incidence of capsular rupture was seen in complicated cataract followed by intumescent cataract. Incidence of vitreous loss was most commonly present in intumescent cataract followed by complicated cataract. 51% of patients recovered to normal vision of 6/6. 41.2% of patients had corrected vision from 6/60 to 6/18. **Conclusion:** The prevalence of cataract is common above 50 years of age. The patients reporting to the hospital for the complaint of loss vision commonly have mature or hyper-mature cataract. Complications are less in the mature and hyper-mature type of cataract.

Keywords: Mature cataract, Intumescent cataract, capsular rupture, vitreous loss.

INTRODUCTION

Cataract blindness is a public health problem of major proportions in developing countries. Intra capsular cataract extraction with aphakic spectacles has been the standard surgical technique for restoring sight.^[1]

Cataract is defined as opacity within the clear lens inside the eye that reduces the amount of incoming light and results in deterioration of vision. Natural lens is a crystalline substance and a precise structure of water and protein to create a clear passage for light. Cataract is often described as being similar to looking through a waterfall or waxed paper.^[2]

It Natural eye lens is a crystalline substance to produce a clear passage for light. Cataract is opacity within the clear lens of the eye and is the dominant cause of socio-medical problem i.e., blindness worldwide. The only available treatment of cataract is surgery. However, insufficient surgical facilities in poor and developing countries and post-operative complications inspire researchers to find out other modes of treatment for cataract. In this review, an attempt has been made to appraise various etiological factors of cataract to make their perception clear to build up counterpart treatment. Present study is an assortment of various available literatures and electronic information in view of cataract etiopathogenesis. Various risk factors have been identified in development of cataracts. They can be classified in to genetic factors, ageing (systemic diseases, nutritional and trace metals deficiencies, smoking, oxidative stress etc.), traumatic, complicated (inflammatory and degenerative diseases of eye), metabolic (diabetes, galactosemia etc.), toxic substances including drugs abuses, alcohol etc., radiation (ultraviolet, electromagnetic waves etc.) are implicated as

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significant risk factors in the development of cataract.^[3]

Cataracts, the world's leading cause of blindness, are an enormous public health problem in both developing and industrialized countries. Identifying the risk factors responsible for cataract formation is a difficult and complicated problem because a realistic causal model in cataract formation would not be a simple linear sufficient cause paradigm (e.g., one exposure-one cataract type). A more complex model depicting each risk factor as a component cause, or part of a sufficient cause such as the sufficient/component cause model proposed by Rothman (62), is a more realistic way to summarize how multiple risk factors act in cataract etiology. Moreover, even this model has shortcomings, especially in explaining cataract etiology. It ignores the obvious importance of time to cataract formation and the way different component causes may act on different etiologic branches of cataract formation, e.g., nuclear sclerosis, posterior subcapsular cataracts, and mixed. Despite the complexity in identifying cataract risk factors, attempting to do so provides new hope in dealing with the morbidity, mortality, and cost of this disease. The evidence is overwhelming that age, trauma, and intraocular inflammation are important cataract risks. However, these exposures either are inevitable or are not major contributors to the population attributable risk. On the basis of both coherence and predictive performance, under nutrition is an important risk factor that can be altered.^[4]

MATERIALS AND METHODS

Study design: Hospital based cross sectional study.

Study period: Two years

Sample size: 1000 cases of cataract as per the inclusion and exclusion criteria during the study period were included in the present study.

Ethical consideration: Institutional Ethics Committee permission was sought prior to the study. Individual written informed consent was taken from all study participants.

Inclusion criteria:

1. Patients with cataract willing to participate in the study

Exclusion criteria:

1. Patients not willing to participate in the study
2. Cataract patients with other severe co-morbidities
3. Bed ridden patients

Methodology:

After applying inclusion and exclusion criteria as well as after ethical consideration only patients having cataract were included in the study. In this way, it was possible to include the 1000 patients

over a period of two years. Present study was hospital based cross sectional study. A pre tested, semi structured questionnaire was used to collect the data. Complete detailed history was taken as per the questionnaire. Thorough clinical examination was carried out. The collected data was entered in Microsoft Excel Sheet and analyzed with the help of proportions.

RESULTS

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

Age group (years)	Number	Percentage
Less than 40	22	2.2
40-50	195	19.5
51-60	451	45.1
61-70	271	27.1
70 and more	61	6.1

The prevalence of cataract was highest in the age group of 51-60 years i.e. 45.1% followed by the age group of 61-70 years (27.1%).

Table 2: Distribution of the study subjects as per the type of cataract.

Type of cataract	Number	Percentage
Immature cataract	095	09.5
Intumescent cataract	008	00.8
Mature cataract	505	50.5
Hyper-mature cataract	347	34.7
Complicated cataract	044	04.4
Traumatic cataract	001	00.1
Total	1000	100

The most common prevalent type of cataract was found to be mature cataract in 50.5% of cases followed by hyper-mature cataract in 34.7% of cases.

Table 3: Incidence of capsular rupture in various cataracts.

Type of cataract	Number	Incidence of capsular rupture	Percentage
Immature cataract	095	05	5.2
Intumescent cataract	008	01	12.5
Mature cataract	505	12	2.36
Hyper-mature cataract	347	19	5.47
Complicated cataract	044	09	20.4
Traumatic cataract	001	01	100
Total	1000	47	4.7

The overall incidence of capsular rupture was 4.7%. It was 100% in traumatic cataract, but as only one case was there, it cannot be concluded that this incidence will always be 100% in traumatic cataract. So barring the traumatic cataract, highest incidence was seen in complicated

cataract followed by intumescent cataract. Mature and hyper-mature cataract showed less incidence.

Table 4: Incidence of vitreous loss in various cataracts.

Type of cataract	Number	Incidence of vitreous loss	Percentage
Immature cataract	095	04	11.4
Intumescent cataract	008	02	25
Mature cataract	505	04	0.79
Hyper-mature cataract	347	07	2.01
Complicated cataract	044	05	11.3

Incidence of vitreous loss was most commonly present in intumescent cataract followed by complicated cataract.

Table 5: Improvement of vision after cataract surgery.

Improvement of vision obtained	Number	Percentage
2-5 meters	30	7.5
6/60 to 6/18	165	41.2%
6/18 to 6/6	205	51

51% of patients recovered to normal vision of 6/6. 41.2% of patients had corrected vision from 6/60 to 6/18.

DISCUSSION

The prevalence of cataract was highest in the age group of 51-60 years i.e. 45.1% followed by the age group of 61-70 years (27.1%). The most common prevalent type of cataract was found to be mature cataract in 50.5% of cases followed by hyper-mature cataract in 34.7% of cases. The overall incidence of capsular rupture was 4.7%. It was 100% in traumatic cataract, but as only one case was there, it cannot be concluded that this incidence will always be 100% in traumatic cataract. So barring the traumatic cataract, highest incidence was seen in complicated cataract followed by intumescent cataract. Mature and hyper-mature cataract showed less incidence. Incidence of vitreous loss was most commonly present in intumescent cataract followed by complicated cataract. 51% of patients recovered to normal vision of 6/6. 41.2% of patients had corrected vision from 6/60 to 6/18.

Desai P et al^[5] found that 31% had visual acuity of 6/12 or better, 54% had visual acuity between 6/18 and 6/60, and 15% had less than 6/60 vision. Considering those who had visual acuity of 6/12 or better at the time of wait listing, by the time of admission for surgery, the vision deteriorated to 6/18-6/60 in 33% and in a further 3% the vision deteriorated to below 6/60. In patients with

moderately poor visual acuity (<6/12-6/60) at the time of wait listing, 13% had less than 6/60 vision by the time of admission for surgery.

Gogate P et al^[6] observed that the most common cause was wooden stick 23 (28.0%) and sharp thorn 14 (17.1%). Delay between trauma and presentation to hospital ranged from same day to 12 years after the injury with median of 4 days. The mean preoperative visual acuity by decimal notation was 0.059 ± 0.073 and mean postoperative visual acuity was 0.483 ± 0.417 ($P < 0.001$). Thirty-eight (46.3%) had best corrected visual acuity (BCVA) $\geq 6/18$ and 51 (62.2%) had BCVA $\geq 6/60$.

Tanna AP et al^[7] reported that among 904 eyes of 587 immune-compromised patients diagnosed with cytomegalovirus retinitis, 198 eyes of 155 patients developed retinal detachment. Among these, 106 eyes of 90 patients underwent retinal detachment repair with silicone oil. The Kaplan-Meier estimated median time to cataract was 1.8 months after surgery with silicone oil. The adjusted relative risk of cataract in eyes that underwent retinal detachment repair with silicone oil compared with eyes that did not was 6.74 ($P < .0001$). Eight of the eyes that developed cataract underwent uncomplicated cataract surgery by phacoemulsification and posterior chamber intraocular lens implantation. Among these, six eyes experienced ≥ 2 lines of improvement in visual acuity. All developed posterior capsule opacification a median of 7 days after cataract surgery. Four of five eyes that that underwent neodymium: yttrium-aluminum-garnet laser capsulotomy experienced ≥ 2 lines improvement in visual acuity.

Engstrom RE Jr et al^[8] found that for patients without macular necrosis, median best-corrected preoperative visual acuity was 20/75 (range, 20/20-20/800), and median best postoperative visual acuity was 20/50 (range, 20/20-20/400). Median final visual acuity was 20/140 (range, 20/25 to count fingers at 1 foot). The median postoperative refractive error (spherical equivalent) was -1.00 D (range, -4.00 D to +7.88 D). Reoperation was required in 3 of 12 eyes for recurrent macular detachment (1 with silicone oil underfill; 2 with proliferative vitreoretinopathy). The macula was attached in all eyes at last follow-up. Reattachment of the peripheral retina was achieved in 10 of 12 eyes. There were no anterior segment complications.

Mordue A et al^[9] observed that there was agreement amongst ophthalmologists on the criteria used to select patients for treatment, and on the visual acuity level at which they would usually recommend surgery. All assess the degree of handicap resulting from cataract; most consider this more important than visual acuity. Over half of the patients were over 75 years old; two-thirds were women. Median visual acuity at listing was 6/36,

but over 40 per cent were 6/60 or worse. Visual acuity at treatment was not recorded for 32 per cent of patients. Wide variation in visual acuity at listing existed between both units and consultants, and for both the affected and other eye. Second extractions may be performed at a better level of visual acuity than for first extractions. Median visual acuity at listing was significantly correlated with total waiting times for individual consultants. Lower cataract extraction rates are associated with long waiting times and poorer visual acuity at listing.

CONCLUSION

The prevalence of cataract is common above 50 years of age. The patients reporting to the hospital for the complaints of loss vision commonly have matured or hyper-mature cataract. Complications are less in the mature and hyper-mature type of cataract.

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