



"STUDY OF MORPHOLOGY OF CATARACT IN MIDDLE AGED PATIENTS ATTENDING OPHTHALMOLOGY OPD (OUT-PATIENT DEPARTMENT) OF DISTRICT HOSPITAL GANDHINAGAR, GUJARAT."

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ABSTRACT

Background: Cataract is a major cause of visual disability in India. Cataract is defined as opacification of lens and or its capsule which stops the transmission of light. Cataract accounts for 62.6% of all blindness affecting 9–12 million bilaterally blind person. Risk factors for cataract are age, trauma, diabetes, ocular inflammation, smoking and UV radiation. Grading of cataract can be done based on slit lamp examination. It can be graded by LOCS 3 grading system. **Materials And Methods:** Retrospective study of Cataract was carried out in 144 patients of age group between 30-60 years attending Ophthalmology outpatient department of district hospital Gandhinagar during period of August 2020 to January 2021. **Results:** In our study the prevalence of nuclear sclerosis cataract was higher (39.6% - 29 patients out of 73) in older age group, i.e. 51- 60 years of age and prevalence of mature cataract was higher (44.6% - 25 patients out of 56) in 41- 50 years of age. The prevalence of posterior subcapsular and posterior polar cataract was noted higher (40% - 6 patients out of 15) in 31- 40 years of age. **Conclusion:** Middle aged population (30- 60 years) must be evaluated for cataract and its grading to improve visual outcome and reduce the burden of blindness on country.

KEYWORDS : cataract, LOCS 3, posterior subcapsular, posterior polar, nuclear sclerosis

INTRODUCTION

Cataract is a major cause of visual disability in India. The pathogenesis of age-related cataract is multifactorial. Cataract, the word derived from Latin means "waterfall". Cataract is opacification of lens and or its capsule which stops the transmission of light. Approximately 45 million people are blind worldwide, out of which cataract accounts for 17.6 million (39%) cases.^[1] Cataract accounts for 62.6% of all blindness affecting 9–12 million bilaterally blind person.^[2-3] In India 20 lakhs new cases of cataract are added up every year. Cataract accounts for approximately 62% of all blindness.^[4-6] Risk factors for cataract are age, trauma, diabetes, ocular inflammation, smoking and UV radiation.

Age-related cataract' also called as senile cataract is the commonest type of acquired cataract affecting equally persons of either sex usually above the age of 50 years. The condition is usually bilateral, but almost always one eye is affected earlier than the other. Morphologically, the senile cataract occurs in three forms:

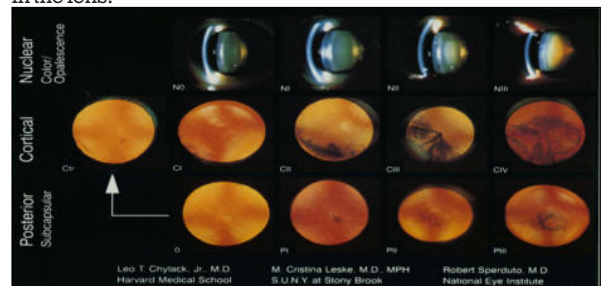
1. Cortical senile cataract (soft cataract):
 - Cuneiform (more commonly) or
 - Cupuliform-posterior subcapsular (PSC) cataract.
2. Nuclear cataract (Hard cataract)
3. Mixed cortical and nuclear

It is very common to find nuclear and cortical senile cataracts co-existing in the same eye; and for this reason, it is difficult to give an accurate assessment of their relative frequency.

Mechanism of loss of transparency is different in nuclear and cortical senile cataracts.

1. Cortical senile cataract- Its main biochemical features are decreased levels in the crystalline lens of total proteins, amino acids and potassium associated with increased concentration of sodium and marked hydration of the lens, followed by coagulation of lens proteins.

2. Nuclear senile cataract. In this, the usual degenerative changes are intensification of the age-related nuclear sclerosis associated with dehydration and compaction of the nucleus resulting in a hard cataract. It is accompanied by a significant increase in water insoluble proteins. However, the total protein content and distribution of cations remain normal. There may or may not be associated deposition of pigment urochrome and/or melanin derived from amino acids in the lens.



Population based studies have suggested that the distribution of lens opacity may differ between races. Grading of cataract can be done based on slit lamp examination. It can be graded by LOCS 3 grading system as shown in the figure below.

The LOCS III contains an expanded set of standards that were selected from the Longitudinal Study of Cataract slide library at the center for Clinical Cataract Research, Boston, Mass. It consists of six slit-lamp images for grading nuclear colour (NC) and nuclear opalescence (NO), five retroillumination images for grading cortical cataract ©, and five retroillumination images for grading posterior subcapsular (P) cataract.^[7] Cataract severity is graded on a decimal scale, and the standards have regularly spaced intervals on a decimal scale.

AIM

Study of morphology of Cataract in middle aged patients attending Ophthalmology OPD (Out-patient department) of District hospital Gandhinagar.

MATERIALS AND METHODOLOGY

Retrospective hospital-based study was carried out in 144 patients of age group between 30-60 years attending Ophthalmology outpatient department of district hospital diagnosed as having cataract. The study was carried out from the months August 2020 to January 2021. This study was carried out after the approval from Central research committee GMERS Medical college, Gandhinagar.

Inclusion Criteria:

- Male and female patients 30-60 years of age having cataract.

Exclusion Criteria:

- History of ocular trauma
- History of ocular disease (uveitis)
- Retinal pathology
- History of previous eye surgery or procedure like laser. (laser iridotomy, retinal photocoagulation)

Total Number Of Patient- 144

All the patients underwent the following examination:

- Visual Acuity
- Slit lamp biomicroscopy for anterior segment examination
- Intraocular pressure measurement with Goldman applanation tonometer
- Dilatation of pupil by topical tropicamide and phenylephrine eye drop and Grading of Cataract.
- Fundus Examination by Indirect Ophthalmoscope.
- Ultrasonography for posterior segment in case of non-visualization of retina due to mature cataract by Indirect Ophthalmoscope to rule out posterior segment pathology.

RESULT

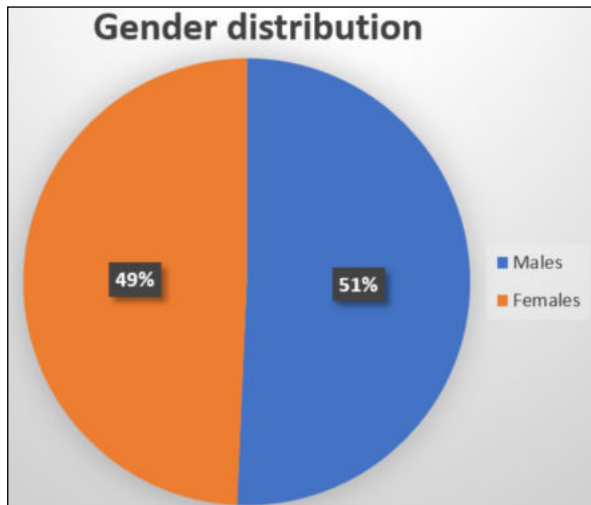


Chart1: Total number of patient- 144
A total of 144 patients were included in the present study of which 73 were male and 71 were female. Youngest being 32 years old and oldest being 60 years old.

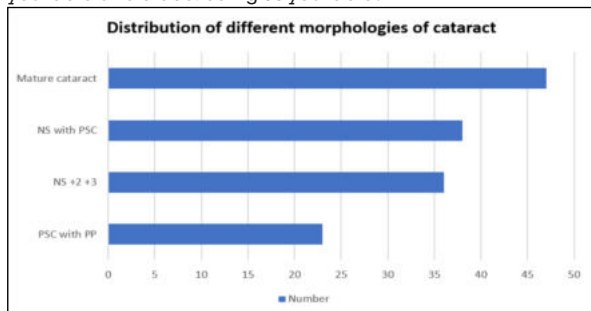


Chart:2

Out of 144 patients of cataract, mature cataract was found in 47 (32.6%) patients, NS+PSC was present in 38 (26.4%) patients, NS +2+3 was present in 36 (25%) patients, PSC + PP (posterior polar) was present in 23 (16%) patients.

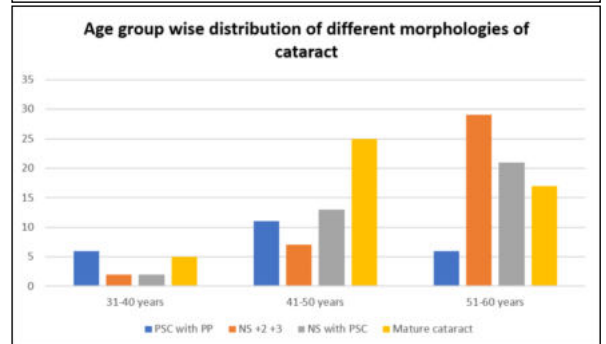
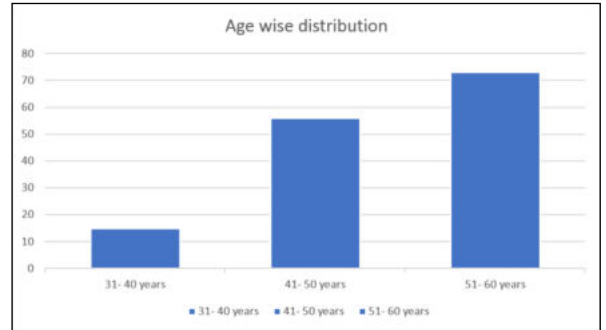


Chart:3

In age group 31- 40 years, a total of 15 patients having different morphologies of cataract were evaluated. Out of that the highest prevalence was noted of PSC (posterior subcapsular cataract) with PP (posterior polar). 6 patients had (40%) PSC with PP, 5 patients (33.3%) had mature cataract, 2 patients (13.33%) had NS +2+3, 2 patients (13.33%) had NS with PSC.

In age group 41- 50 years, a total of 56 patients having different morphologies of cataract were evaluated. Out of that the highest prevalence was noted of mature cataract. 25 patients (44.6%) had mature cataract, 13 patients (23.21%) had NS with PSC, 11 patients (19.6%) had PSC with PP and 7 patients (12.56%) had NS +2+3.

In age group 51- 60 years, a total of 73 patients having different morphologies of cataract were evaluated. Out of that the highest prevalence was noted of NS +2+3. 29 patients (39.72%) had NS +2+3, 21 patients (28.76%) had NS with PSC, 17 patients (23.28%) had mature cataract and 6 patients (8.2%) had PSC with PP.

DISCUSSION

In our study, mean age of patients was 45 years. An African study had reported a mean age at presentation at 66.5 years^[8], whereas Conner-Spady et al had reported the mean age of patients in Canada to be 73.4 years.^[9] In our study, the incidence of cataract is slightly higher in males and Contradictory to that, a study which was conducted by Raizada et al.^[10] had the prevalence of cataract more in females. A study from the USA also showed a higher prevalence of cataract among women among both blacks and whites.^[11] Similar trend was observed in Africa.^[12]

In our study the prevalence of nuclear sclerosis c was higher in older age group, i.e. 51- 60 years of age and similar findings has been reported in African study. The prevalence of posterior subcapsular and posterior polar cataract was noted in 31-40 years of age as compared to older age group because of posteriorly located lens opacity leading to early

presentation for treatment. Prevalence of mature cataract was higher in 41- 50 years of age in our study.

Our study was carried out from August 2020 to January 2021 in covid era, so the number of mature cataract and hard cataract patients attending Ophthalmology OPD due to severe visual disability.

CONCLUSION

From our study we can conclude that not only older age group but middle-aged population (30- 60 years) also having mature cataract and they must be evaluated for cataract and its grading. Young age and professional class workers are seeking medical help at early stage to reduce visual morbidity. A study of longer duration, including various risk factors and wider population needs to be undertaken. Early diagnosis of cataract of different morphologies helps in plan of management, increased visual outcome of middle-aged patients, reduce complications and reduce the burden of blindness in state and country.

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