

# Lens induced glaucoma - Need of early diagnosis and treatment among rural population

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## Abstract

**Purpose:** To determine clinical presentation of lens induced glaucoma, complications and outcome of treatment.

**Methods:** Retrospective analysis of 50 cases of lens induced glaucoma over period of 1 year between June 2017 to June 2018 at tertiary care centre. Visual acuity and intraocular pressure (IOP) was assessed preoperatively and postoperatively along with duration of symptoms and complications.

**Key Word:** Lens induced glaucoma.

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## INTRODUCTION

Cataract is the most important cause of preventable blindness in India. Negligence in cataract patient may lead up into lens induced glaucoma and poor visual outcome if treatment is delayed. Though it is preventable and curable condition, late reporting among rural population may cause irreversible loss of vision. Lens induced glaucoma described by Gifford<sup>1</sup> as glaucoma associated with hypermature cataract. Von Reuss<sup>2</sup> described lig as glaucoma associated with spontaneous absorption of lens substance through intact capsule. Lens induced glaucoma may occur as open angle or angle closure glaucoma. Open angle glaucoma can occur due to release of lens proteins through capsule in hypermature cataract that is phacolytic glaucoma or hypersensitivity to own lens protein following penetrating trauma or surgery (phacoantigenic glaucoma). Angle closure may occur as in phacomorphic glaucoma. So lig can be described<sup>3,4,5</sup> by various names like lens induced uveitis and glaucoma, phacotoxic

glaucoma, phacogenic glaucoma and phacolytic glaucoma. The study is retrospective hospital based study. The records of cataract cases who were diagnosed as lig and operated during given period were analysed. Aim was to study profile of lens induced glaucoma leading to blindness in rural population.

## MATERIALS AND METHODS

Study was conducted at Tertiary care centre, which included 50 cases of Lens Induced Glaucoma, reported during one year period and operated for same. All of them reported with pain, redness and watering in addition to gradual progressive loss of vision in affected eye. All cases were diagnosed as LIG based on clinical findings and raised IOP. Other causes of glaucoma such as, traumatic cataract, complicated cataract, secondary cataract were excluded from study.

### Details Assessed were:

1. Preoperative and postoperative visual acuity
2. Preoperative and postoperative IOP
3. Intraoperative and postoperative complications if any
4. Slit lamp examination- anterior segment details assessed.

Ethical consideration- IEC approved study.

## RESULTS AND DISCUSSION

- Proportion Out Of Senile Cataract Cases- Lens induced glaucoma accounts for 1.4 percent of all cases of senile cataract admitted for cataract

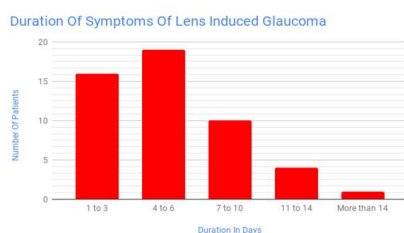
extraction during this period.

- Incidence Of Phacomorphic Glaucoma -39 cases out of 50 cases were diagnosed as Phacomorphic glaucoma, based on presence of pain and redness of affected eye associated with presence of corneal edema, shallow anterior chamber, intumescent lens and dilated pupil with raised IOP. Incidence of Phacomorphic glaucoma was more as compared to other types of LIG<sup>6,7</sup>.
- Incidence Of Phacolytic Glaucoma- 11 cases out of 50 cases were diagnosed as phacolytic glaucoma. No cases were reported of Phacoanaphylaxis glaucoma.
- Among Them - Female Patients Were 32 and Male Patients Were 18. Similar sex ratio noted in case study<sup>8</sup>. Age wise distribution given below in table 3.

**Figure 1:** Duration of Symptoms of lens induced glaucoma

Duration of symptoms (In Days)	No.of patients
1-3	16
4-6	19
7-10	10
11-14	04
>14	01

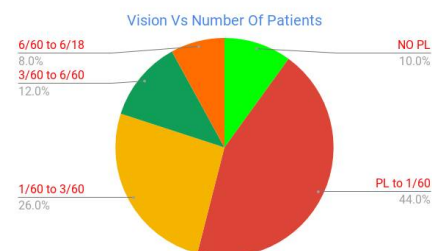
Time gap between onset of acute symptoms of decrease in vision, pain and redness of affected eye and reporting of patients to hospital were analysed. Most of the patients reported within 4 to 6 days after onset of symptoms. 10% patients reported after 10 days of onset of symptoms. Late reporting among older patient was major determining factor along with surgical complications responsible for poor outcomes<sup>9</sup>.



Visual acuity was markedly reduced in all cases due to cataract as well as due to loss of corneal transparency due to raised IOP.

**Table 2:** Post operative visual acuity of patients

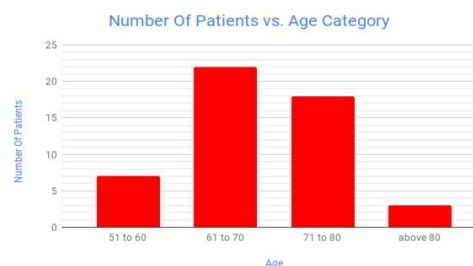
BCVA	No.OF PATIENTS (PERCENTAGE)
6/60 -6/18	04 (8%)
3/60-6/60	06 (12%)
1/60-3/60	13 (26%)
PL TO 1/60	22(44%)
NO PL	05 (10%)



was noted from above table that 8% of all cases gained good vision. Maximum patients were having vision up to 1/ 60 ( 44%).Result can be compared with other studies like study Pradhan et al<sup>10</sup> where 21% had postoperative vision less than 6/60.

**Table 3:** Comparison for age category and number of Patients

Age	No.of patients
51-60	07
61-70	22
71-80	18
>80	03



Patient age ranged from 52 to 83 years. Youngest patient was 52 years female and oldest was 83 years male.

**Table 4:** Assessment of complications

Complications	Number Of Patients
Striate keratopathy	10
Post.capsule rent	04
Iris prolapse	03
Post Operative increase in IOP ( after 1 month follow up)	01

Few intraoperative and postoperative complications noted in this study, which were responsible for poor vision<sup>11</sup> Most common was striate keratopathy, noted in 10 cases out of 50.Only one patient had postoperative rise in IOP, other all patients were having IOP less than 20 without any antiglaucoma medications.<sup>12,13</sup>.

**Table 5:** Comparative Analysis Of Duration Of Symptoms and Best Corrected Visual Acuity In Post Operative Period

Duration of symptoms (in days)	BCVA	PERCENTAGE
1-3	6/60 to 6/18	8%
4-6	3/60 to 6/60	12%
7-10	1/60 to 3/60	26%
11-14	PL to 1/60	44%
> 14	No PL	10%

Duration of symptoms and BCVA had positive correlation. Earlier reported patients had better visual acuity as IOP was controlled earlier<sup>8</sup> with less number of complications. Patient reported late found to have optic disc changes due to persistently raised IOP for longer duration.

**Table 6:** Analysis of effect of preoperative iop during admission and average best corrected visual acuity in postoperative period

PREOPERATIVE IOP (in mmHg)	AVERAGE BCVA	PERCENTAGE
20 -40	3/60-6/18	20%
41-50	PL to 3/60	70%
>51	NO PL	10%

Preoperative IOP also influenced best corrected visual acuity. Lesser rise in IOP at time of admission had better vision<sup>8</sup> in postoperative period. Higher IOP at time of admission was controlled with use of Mannitol, topical antiglaucoma medications and oral Acetazolamide.

## CONCLUSION

Despite high levels of iop at time of admission, iop get normalised after cataract extraction. results give us importance of early diagnosis of vision threatening lens induced glaucoma. It is important to spread awareness among patient about visually disabling cataract and early reporting if above symptoms present. Poor outcome may occur if treatment is delayed and prompt early intervention may reduce further complications. It also reflects importance of use of advances in cataract extraction surgery in preventing complications and restoring best possible vision.

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