INTRODUCTION:
Glucoma is a diverse group of eye diseases with multifactorial etiology, characterized by an acquired loss of retinal ganglion cells, progressive optic neuropathy with morphological abnormalities in the optic nerve head and visual field defects, in which raised intraocular pressure is a major and only modifiable risk factor.[1]

The estimated prevalence of glaucoma in the world was 60.5 million in 2010 and is expected to increase to 79.6 million in 2020.[2] Studies have shown that approximately 12 million Indians have already been affected by the disease by the year 2010 and with greater life expectancy and rapidly growing ageing population this figure has been estimated to increase to 16 million by 2020.[3]

Glaucoma is a lifelong disease and is a leading cause of irreversible but preventable blindness (5.80%) in Indian next only to cataract(62.60%)[4, 5]

Lens induced glaucoma is a type of secondary glaucoma and is an ophthalmic emergency. The crystalline lens may be associated with glaucoma if dislocated either due to trauma or certain inherited disorders. A cataractous lens may lead to glaucoma by obstruction of trabecular meshwork with protein and macrophages (i.e. Lens particle glaucoma), lens particle and debris (i.e. Lens particle glaucoma) or inflammatory cells as a part of immune response to lens protein antigen (phacoanaphylactic glaucoma). A swollen or intumescent lens may lead to papillary block and secondary angle closure glaucoma (phacomorphic glaucoma).[5, 6] Lens dislocation or subluxation can also lead to glaucoma.

There is cataract backlog of around 12 million in India.[6] This huge backlog of ever increasing cataract due to increased life expectancy, rapidly growing ageing population and disparity between rate of new cases and rate of surgical removal, the occurrence of LIG in India has high probability.[7]

MATERIALS AND METHODS:
The present study was conducted in a tertiary care hospital for a period of one year. Altogether 51 patients presented with lens induced glaucoma were included in this study. Informed and written consent were taken from each of the patients.

Inclusion criteria: All patients that were diagnosed as LIG irrespective of age, sex and clinical types.

Exclusion criteria: 1. Cases of primary open angle glaucoma 2. Cases of lens induced glaucoma with previous posterior segment pathology

RESULTS AND OBSERVATIONS:
The incidence of LIG was found to be 0.159%. Phacomorphic glaucoma was 58.86% followed by Phacolytic glaucoma 33.33%, lens particle glaucoma 5.82% and 3.92% of glaucoma secondary to lens dislocation. Conclusion: LIG is an important vision threatening complication of cataract, so early diagnosis and treatment of mature cataract is very important to reduce the incidence of LIG as well as delayed treatment of LIG may result in poor visual outcome.

KEYWORDS: : LIG, Phacolytic glaucoma, Phacomorphic glaucoma, tonometry.
Majority of cases (60.78%) have IOP more than 40 mm of Hg at presentation. 60% of them (11.76%) had IOP more than 50 mm of Hg.

Table 8: Presenting Iop In Different Types Of Lig

<table>
<thead>
<tr>
<th>Types</th>
<th>20-30 (mm of Hg)</th>
<th>31-40 (mm of Hg)</th>
<th>&gt;40 (mm of Hg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phacomorphic</td>
<td>3</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>Phacolytic</td>
<td>1</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Lens particle</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Dislocated lens</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

In this study, majority of patients developing phacomorphic and phacolytic glaucoma had IOP more than 40 mm of Hg at presentation.

DISCUSSION

The present study was conducted on 51 cases of lens induced glaucoma for a period of one year in a tertiary care hospital.

Statistically Chi-Square ($\chi^2$) and Probability values (p) were used and p-value <0.05 was considered statistically significant.

The incidence of LIG in this study was marginally less but comparable to the observation by Saikia A.K.\cite{1} in a study conducted in the same institute. It is also much lower than that of previous report by Dutta et al.\cite{3} The reason for lower incidence is probably due to the effective implementation of the National Programme for Control of Blindness under which multiple eye camps are being conducted round the year.

This study observed that majority cases 60.78% occurred among females and 39.22% cases in males. Similar results were seen in a few other studies by Pradhan et al.\cite{4} in 1994 and by Dhar et al.\cite{5} The reason females were affected more may be due to socioeconomic and cultural constraints that play a role leading to neglect and late presentation of cataracts in females.

In this study highest cases occurred in age group 56-70 years. Pradhan et al.\cite{6} found highest occurrence in 60-69 years of age. Similar observations were also made by Saikia A.K.\cite{7}

The study reported that the most frequent type of LIG was Phacomorphic glaucoma (58.86%) followed by Phacolytic glaucoma (33.33%). Similar occurrence was noted by Pranja et al. (52.68%)\cite{8} and Pradhan et al. (72%).\cite{9}

In our series, 100% of the cases presented with eye pain and diminution of vision followed by redness of the affected eye in 96% cases.

Table 7: Iop At Presentation

<table>
<thead>
<tr>
<th>IOP (mm of Hg)</th>
<th>No. of patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30</td>
<td>05</td>
<td>9.80</td>
</tr>
<tr>
<td>31-40</td>
<td>15</td>
<td>29.41</td>
</tr>
<tr>
<td>41-50</td>
<td>25</td>
<td>49.02</td>
</tr>
<tr>
<td>&gt;50</td>
<td>06</td>
<td>11.76</td>
</tr>
</tbody>
</table>

In our series 49.02% of cases presented with IOP more than 40 mm of Hg and the mean IOP at presentation in our study was 42.54 mm of Hg. Dhar et al.\cite{5} in his study reported mean IOP as 36.6 mm of Hg in affected eye.

CONCLUSION:

LIG is an important vision threatening complication of cataract. The crystalline lens plays an important role in the mechanism of rise in IOP. Early diagnosis and treatment of mature cataract is very important to reduce the incidence of LIG as well as to avoid poor visual outcome. There is a great need to impart health education to the public about the importance of timely management. The role of community outreach programme in early diagnosis of cataract cannot be undermined because success of such initiatives will lead to decrease in the incidence of Lens Induced Glaucoma in the community.

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