Discussion
DISCUSSION

Lens induced glaucoma is a rather common entity in the Ophthalmics department of M.L.B. Medical College Jhansi. This is perhaps due to the fact that the total cataract surgeries performed are far less than the total surgeries required. What ever be the type, there is always a compromise in the optic nerve function due to rise in intraocular pressure. All the cases of lens induced glaucoma have a guarded prognosis.

In this study the incidence of lens induced glaucoma, with particular reference to the regional increase has been worked out. An attempt has been made to predict the possible risk factor and probable final visual acuity.

During the period of this study a total of 619 cataract surgeries were performed in our department by various units of these 36 were treated for lens induced glaucoma. 5 patients did not turn up for surgery. Such patients have been included in our study only for clinical and academic interest. So the total number of patients was 41 and the incidence was found and the incidence was found to be 6.62%.

Jain et al (1982) reported incidence of 3.91%, Dhar (1984) reported 3.40%, Angra et al (1991) reported an incidence of (3.91%). The incidence in this study is much higher and it could be due to socio-economic backwardness,
self neglect due to lack of education and a much smaller study group.

Out of 41 cases in this study 29 turned out to be of phacolytic type and 08 were phacomorphic type. Rathì et al (1996) reported 46 cases of phacomorphic glaucomas out of 62 eyes. Similar results have been reported by Pranja et al (1996). To explain this disparity we need further studies which are beyond the scope of this work.

In our study, females seem to be at a higher risk of developing lens induced glaucoma (56.09%) Probably it is because of lesser attention paid to the older females or due to shallower anterior chamber depth in females. Similar findings have been reported by Chatterjes et al (1982), Framingham eye study (1977), Pranja et al (1996), Jain et al (1983), Angra et al (1991) and Rathì et al (1998).

Most of the cases (39.02%) were between 61-70 years of age with peak incidence around 65 ± 2 yrs.

Fellow eye was also observed in each case and most of the cases had immature cataract. It was observed that no case had pseudophakia. This was probably because those going for IOL were aware of the gravity of the disease and they underwent timely treatment. At the time of 1st OPD visit 40.50% patients had a visual acuity of hand movement, 27% PL/PR. 16.20% had PL only with defective PR and 13.5% patients doubtful PL.
The patients were divided into 5 categories on the basis of duration of attack. 7 cases reported within 2 days of attack, 9 between 3-5 day, 7 between 6-10 days and 5 between 11-20 days and 8 cases reported after 20 days. Those reporting within 2 days had a mean IOP of 34.3 mm of Hg, those between 3-5 days had mean IOP of 45.4 mm of Hg, those reporting between 6-10 days had mean IOP of 33.8 mm of Hg. Patients reporting between 11-20 days had an IOP of 45.5 mm of Hg and those having more than 20 days of history had mean IOP of 51.7. It could be ascertained that there is an increase in mean IOP with the duration of illness. Jain et al (1983) and Pranja et al (1996) report similar findings but Angara et al (1991) found no relationship between duration of attack and the height of IOP.

The intraoperative and post operative complications were noted. Striate keratitis (33.6%) and iritis (28%) were the most frequent complications. The possible reasons were analysed. It was thought that it was due to turbulence endotheliopathy or lens rubbing against the cornea. Iritis could be pre-existing or due to excessive handling of iritis during surgery. It is proposed that cleaning of cortical material should be done in a formed anterior chamber using viscoelastic and one should prefer an indirect simcoe canula. Section could be enlarged to ensure proper delivery of lens. As far as iritis is concerned, an attempt must be made to
control it preoperatively using topical betamethasone sodium phosphate (0.1%).

Vitreous loss and PC rent can be avoided by using preoperative mannitol to a great extent.

As discussed previously the patients were divided into 5 groups on the basis of duration of attack. The preoperative visual acuity was noted carefully. The 7 patients who reported within 2 days had vision of hand movement. Out of 9 patients, reporting between 3-5 days 5 had hand movement and 4 had PL/RR. A total of 7 patients reported between 6-10 days 3 of them had hand movement, 3 had PL/RR and 1 had only PL present. 5 patients reported between 11-20 days. 2 of them had PL/PR one had PL and 2 had doubtful PL. Those reporting after 20 days had the worst visual acuity, one had PL/RR, 4 had only PL and 3 had doubtful PL, Thus it can be concluded that preoperative visual acuity is related with the duration of attack. Jain et al (1983), Angra et al (1981) and Singh et al (1994) obtained similar findings. Angra et al (1991) stated that this could probably be because of the rudder high intraocular pressure which could cause optic nerve ischemia leading to conduction defects.

Earlier, intracapsular cataract extraction was considered to be the treatment of choice for lens induced glaucomas. It was agreed that posterior capsule is very fragile due to microscopic defects particularly in phacolytic
glaucoma. Zeeman (1943) reported that this may lead to phaconaphylactic glaucoma. Extracapsular surgery was first advocated by Irvine in 1957. He was of opinion that this technique minimized the chances of vitreous loss. The current technique of co-axial microscopic extracapsular extraction was popularised by Gross and Pearce (1984). They reported excellent results in cases of phacolytic glaucoma. Lane et al reported similar findings in 1988. They performed extra capsular cataract extraction with posterior chamber intraocular lens implantation and also controlled intraocular pressure with excellent visual results. Similar findings were reported by Jain et al (1993), Singh et al (1994), Pranja et al (1996). Mandal AK (1996) advocates aspiration of fluid cortex from the capsular bag and fixation of intraocular lenses in phacolytic glaucoma. The surgical treatment of lens induced glaucoma has thus come a long way from intracapsular cataract extraction to standard extracapsular cataract extraction and now with in the bag posterior chamber intraocular lens implantation.

In order to ascertain the final visual acuity each group was further sub divided into 6 groups on basis of final visual acuity. Of 7 cases in group A, 3 were clubed in group attaining vision 6/12 or better another 3 had vision between 6/24 - 6/13 and 1 had vision between 6/36 6/60. In group A2 4 patients achieved 6/12 or better vision and 5 had vision between 6/24 - 6/18. In group B1 only 1 could achieve 6/12
or better vision 3 had vision between 6/24 - 6/18 and one had vision between 6/60 - 6/36 and 2 had vision less than 6/60. In group B2 no patient had vision of 6/12 or better, 2 could get vision between 6/24-6/18, 1 had vision between 6/60-6/36 and 2 had vision less than 6/60. In group B3 no patient could achieve vision of 6/12 or better on even 6/24 - 6/18. 5 patients had vision 6/60 - 6/36. 2 had vision of 6/60 or less and one patient had hand movement. The results were thus analysed

<table>
<thead>
<tr>
<th>Vision</th>
<th>Count</th>
</tr>
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<tbody>
<tr>
<td>6/12 or better</td>
<td>8</td>
</tr>
<tr>
<td>6/24 - 6/18</td>
<td>13</td>
</tr>
<tr>
<td>6/60 - 6/36</td>
<td>8</td>
</tr>
<tr>
<td>6/60 or less</td>
<td>6</td>
</tr>
<tr>
<td>Hand movement</td>
<td>1</td>
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The causes for low vision were evaluated. A total of 9 patients showed glaucomatous disc changes. 3 patients and persistent and severe iritis and 2 probably had age related macular degeneration.

It was also observed that the patient who presented late had poor post-operative vision. This also explains the lesser percentage of patients with good visual recovery. Jain et al (1983) also reported that as the duration of attack increases there was a progressive decline in the recovery of visual acuity and beyond 3 weeks only light perception or hand
movement could be recovered. Angra et al (1991) also reported that the final visual prognosis was directly proportional to the duration of attack. Pranja et al 1996 had similar findings.

We also noted that patients reporting within 10 days of attack had normal intraocular pressure without any medication. Those reporting after this were advised timolol malate 0.5% solution and regular followup.