OBSERVATIONS
The present study of the simultaneous operation for cataract and preexisting glaucoma and intraocular lens implantation was carried out in the Department of Ophthalmology, M.L.B. Medical College, Jhansi during the period from May 1999 to July 2000. During this period 60 patients of cataract with preexisting glaucoma were operated by triple procedure and were followed up. The follow up of the patients varied in between 2 months to 6 months.

**TABLE - I**

**Sex incidence**

<table>
<thead>
<tr>
<th>Total number of patients</th>
<th>Females</th>
<th>Males</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>66.66%</td>
<td>33.33%</td>
</tr>
</tbody>
</table>

60 patients of cataract with glaucoma were operated. In these 60 patients, 40 patients were female i.e. 66.66% and 20 patients were male i.e. 33.33%
TABLE - II

Age Incidence

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Number of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>41 - 50</td>
<td>41 6.66%</td>
</tr>
<tr>
<td>51 - 60</td>
<td>30 50%</td>
</tr>
<tr>
<td>61 - 70</td>
<td>18 30%</td>
</tr>
<tr>
<td>71 - 80</td>
<td>8 13.33%</td>
</tr>
</tbody>
</table>

The age of the patients varied between 41 to 80 years. Age group 41 - 50 included 4 (6.66%) patients. In age group 51 - 60 30 patients (50%). In age group 61 - 70 18 patients (30%). In 71-80 years age group 6 patients (13.33%) were operated.

The minimum number of 4 patients 6.66% were in age group 41 - 50.

The maximum number of 30 patients recorded in 5th and 6th decade i.e. 50%.
### TABLE - III

**Type of Cataract**

<table>
<thead>
<tr>
<th>Type of cataract</th>
<th>Number of Eyes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mature cataract with raised IOP.</td>
<td>45 75%</td>
</tr>
<tr>
<td>Immature cataract with raised IOP.</td>
<td>15 25%</td>
</tr>
</tbody>
</table>

The maximum number of patients having mature cataract were 45 (75%) and 15 (25%) were having immature cataract with raised IOP.

**Socio Economic Status**:

We divided the patients according to socioeconomic status. There was no patient from upper class and upper middle class. Only 10 patients were from middle class (16.66%). 20 patients were from lower middle class (33.33%) and 30 patients were from lower class (50%).

The maximum patients were from lower class i.e. 30 patients (50%).
TABLE - IV

Socio Economic Status

<table>
<thead>
<tr>
<th>Socio Economics Status</th>
<th>No. of Cases</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle Class</td>
<td>10</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Lower Middle Class</td>
<td>20</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>Lower Class</td>
<td>30</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>42</strong></td>
<td><strong>18</strong></td>
<td></td>
</tr>
</tbody>
</table>

We further divided the patients from urban and rural area. The total number of patients from rural area were 42 (70%) and from urban were 18 (30%).

**The presentation of symptoms** -

The patients presented with gross visual deficit because of advanced lenticular opacities and glaucoma.

The patients presented with gradual diminution of vision with headache, eye ache, coloured halos, and few patients with congestion. These symptoms were varying from 6 months to 2½ years.
**TABLE - V**

**Pre Operative Visual Status**

<table>
<thead>
<tr>
<th>Vision</th>
<th>Number of eyes</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/36</td>
<td>8  13.33%</td>
</tr>
<tr>
<td>6/60 - 1/60</td>
<td>33 55%</td>
</tr>
<tr>
<td>Finger counting</td>
<td>9  15%</td>
</tr>
<tr>
<td>Hand Movement</td>
<td>6  10%</td>
</tr>
<tr>
<td>PL + PR</td>
<td>4  6.66%</td>
</tr>
<tr>
<td>Doubtful PL</td>
<td>0  0</td>
</tr>
</tbody>
</table>

Table V shows preoperative visual acuity of 60 eyes. with cataract and preexisting glaucoma. 4 (6.66%) eyes had only positive PL.PR. 6 (10%) eyes had visual acuity hand movement and 9 (15%) had finger counting. The maximum 33 (55%) eyes were having visual acuity in between 1/60 - 6/60. 8 eyes (13.33%) had visual acuity in between 6/60 and 6/36.
TABLE VI

Pre Operative Intra Ocular Pressure

<table>
<thead>
<tr>
<th>Preoperative Intraocular Pressure (mmHg)</th>
<th>Number of eyes</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-25</td>
<td>12 (20%)</td>
</tr>
<tr>
<td>26-30</td>
<td>13 (55%)</td>
</tr>
<tr>
<td>31-35</td>
<td>10 (16 56)</td>
</tr>
<tr>
<td>36-40</td>
<td>5 (5%)</td>
</tr>
</tbody>
</table>

2 eyes were having IOP 50.1 mmHg.
12 (20%) eyes were having IOP in between 21-25 mmHg.
10 eyes (15.66%) were having IOP between 31-35 mmHg and 3 eyes were having between 36-40 mmHg.

The maximum number of 33 eyes were having IOP between 16-30 mmHg.

Other Eye -

The other eye invariably 42 were having raised IOP. 8 eyes had filtering operation. 6 eyes had triple procedure. 4 eyes had normal IOP.
### TABLE - VII

**Pre Operative anti glaucoma therapy**

The anti glaucoma therapy was given to all the patients and is shown in table.

<table>
<thead>
<tr>
<th>Medicine</th>
<th>No. of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Timolol alone 0.5%</td>
<td>33 55%</td>
</tr>
<tr>
<td>- Timolol 0.5% &amp; pilocar 2%</td>
<td>8 13.33%</td>
</tr>
<tr>
<td>- Timolol 0.5% Acetazolamide</td>
<td>15 25%</td>
</tr>
<tr>
<td>- All above + mannitol</td>
<td>4 6.66%</td>
</tr>
</tbody>
</table>

The nonselective timolol 0.5% was given to maximum 33 patients (55%). Patients who did not respond well to timolol alone, pilocarpine 2% twice or four times a day were added. 8 patients (13.33%) were on timolol and pilocarpine 2%

15 (25%) patients were on Timolol 0.5% and 250mg acetazolamide in divided doses.

The IOP was controlled in all the patients except 4 patients. These 4 patients did not respond to above
medications and tension remained high. So intravenous 
manitol was given one hour prior to surgery.

**TABLE - VIII**

**Pre operative Diagnosis**

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>No. of eyes</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Ocular hypertension</td>
<td>30 50%</td>
</tr>
<tr>
<td>- Chronic simple glaucoma</td>
<td>32 36.66%</td>
</tr>
<tr>
<td>- Chronic angle closure glaucoma</td>
<td>8 13.33%</td>
</tr>
</tbody>
</table>

Datas in table VIII were only probable diagnosis dependent only on IOP and cup disc ratio because field charting can not be done due to lenticular opacities.

Surgical treatment was done as quickly as possible after the initial medical treatment. Trabeculectomy was done along with cataract catraction and posterior chamber intraocular lens implantation in all the 60 eyes in one stage operation and it is called as triple procedure.
Operative complications

The various complications occur preoperatively, intraoperatively and immediately after operation. These are recorded in table IX & X.

1. Pre operative :- There was no preoperative complications.

2. Intra Operative complication :- These are recorded in table No. IX. Hyphaema was seen only in 6 eyes (10%). It was never massive enough to interfere with the operation and it was washed during suction and irrigation.

- Iris injury was seen only in one eye.
- The posterior capsule rent was there in 4 cases {6.66%} But there was no vitreous prolapse in any case.
TABLE - IX

Intra Operative Complication

<table>
<thead>
<tr>
<th>Complication</th>
<th>Number of Eyes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyphaema</td>
<td>6 (10%)</td>
</tr>
<tr>
<td>Iris injury</td>
<td>2 (3.33%)</td>
</tr>
<tr>
<td>P.C. rent</td>
<td>4 (6.66%)</td>
</tr>
<tr>
<td>Vitreous prolapse</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

The complication occurring within 15 days of follow up period were considered immediate or as early post operative complications and recorded in table no. X -

TABLE - X

Post Operative Complications

<table>
<thead>
<tr>
<th>Complications</th>
<th>No. of eyes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Striate Keratitis</td>
<td>6 (10%)</td>
</tr>
<tr>
<td>Shallow A.C.</td>
<td>2 (3.33%)</td>
</tr>
<tr>
<td>Hyphatma</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Intis</td>
<td>4 (6.66%)</td>
</tr>
</tbody>
</table>
Striate keratitis was seen in 6 cases 10%. It was cleared in all cases within 15 days of follow up.

Shallow Anterior chamber was observed in 2 cases (3.33%) on very first day post operatively and it was recovered within 2-3 days after pressure bandage application.

Iritis was seen in 4 cases 6.66% and it was fully cured within 7 days of frequent instillation of combined eye drops and tropicacyl once a day.

Distortion of pupil was seen in 2 cases but they did not had any significant effect on visual acuity. They was no evidence of infection in any case.
TABLE - XI

Post operative visual acuity after 1 wk. and 4 weeks

<table>
<thead>
<tr>
<th></th>
<th>1 Week</th>
<th></th>
<th>4 Week</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>H M. - FC</td>
<td>8</td>
<td>13.33%</td>
<td>4</td>
<td>6.66%</td>
</tr>
<tr>
<td>1/60 - 6/60</td>
<td>18</td>
<td>30%</td>
<td>10</td>
<td>16.66%</td>
</tr>
<tr>
<td>6/36 - 6/24</td>
<td>16</td>
<td>26.66%</td>
<td>10</td>
<td>16.66%</td>
</tr>
<tr>
<td>6/18</td>
<td>12</td>
<td>20%</td>
<td>26</td>
<td>43.33%</td>
</tr>
<tr>
<td>6/12 or more</td>
<td>6</td>
<td>10%</td>
<td>10</td>
<td>16.66%</td>
</tr>
</tbody>
</table>

Table No. XI- Shows the visual acuity after 1 wk and 4 weeks.

**After 1 wk.** - 8 patients 13.33% were having visual acuity between Hand movement and finger counting. 18 patients (30%) were having visual acuity 1/60 - 6/60, 16 (26.66%) patients were having 6/36 - 6/24. 12 patients (20%) were having visual acuity of 6/18.

6 (10%) cases had visual acuity 6/12 or more.
After 4 wk. - 4 (6.66%) patients were having visual acuity between Hand movement and finger counting. 10 patients (16.66%) Patients were having visual acuity 1/60 - 6/60, 10 (16.66%) patients were having between 6/36 - 6/24. 26 patients (43.33%) were having visual acuity of 6/18. 10 (16.66%) had visual acuity 6/12 or more.

**TABLE - XII**

**Visual Acuity pre operative and Post operative after 6 wks**

<table>
<thead>
<tr>
<th>Visual Acuity</th>
<th>Pre Operative number of eyes</th>
<th>Post operative after 6 wks of eyes</th>
</tr>
</thead>
<tbody>
<tr>
<td>PL·n</td>
<td>4 (6.66%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>HM-FC</td>
<td>15 (25%)</td>
<td>4 (6.66%)</td>
</tr>
<tr>
<td>1/60 - 6/60</td>
<td>33 (55%)</td>
<td>6 (10%)</td>
</tr>
<tr>
<td>6/36 - 6/24</td>
<td>8 (13.33%)</td>
<td>8 (13.33%)</td>
</tr>
<tr>
<td>6/18</td>
<td>0 (0)</td>
<td>30 (50%)</td>
</tr>
<tr>
<td>6/12 or more</td>
<td>0 (0)</td>
<td>12 (20%)</td>
</tr>
</tbody>
</table>

Above Table No. XII - shows the preoperative and post operative visual acuity after 6 weeks

[41]
Post operative after 6 weeks visual acuity was Hand movement to finger counting in 4 eyes (6.66%) Between 1/60 and 6/60 in 6 eyes (10%). Between 6/36 - 6/24 in 8 eyes (13.33%) 6/18 in 30 eyes (50%) 12 (20%) patients had 6/12 or more.

Best post operative visual acuity was between 6/18 and was there in 30 eyes (50%).

Out of 60 patients operated by triple procedure 54 (90%) patients achieved better visual acuity as compared to preoperative visual acuity. The visual acuity remained the same in 6 patients (10.00%) There was no patient in whom the visual acuity worsened.
**TABLE - XIII**

Post operative intra ocular pressure after 1 wk, 4wk, 6 wk

<table>
<thead>
<tr>
<th>Intra ocular pressure mmHg</th>
<th>After 1 weeks</th>
<th>After 4 weeks</th>
<th>After 6 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 - 15</td>
<td>14 (23.33%)</td>
<td>21 (35%)</td>
<td>22 (36.66%)</td>
</tr>
<tr>
<td>15 - 20</td>
<td>36 (60%)</td>
<td>31 (51.66%)</td>
<td>36 (60%)</td>
</tr>
<tr>
<td>21 - 25</td>
<td>10 (16.66%)</td>
<td>8 (13.33%)</td>
<td>2 (3.33%)</td>
</tr>
</tbody>
</table>
After 1 week in intraocular pressure was between 11-15 mmHg in 14 eyes (23.33%) and between 15-20 in 36 eyes (60%) and between 21-25 in 10 eyes (16.66%).

The minimum recorded IOP after 1 weeks was 10.2 and maximum was 24.3 mmHg.

After 4 weeks intraocular pressure was between 11-15 mmHg in 21 eyes (35%), between 15-20 in 31 (51.66%) and between 21-25 in 8 (13.33%) eyes.

The intraocular pressure was above 22 mmHg in 8 eyes at the end of one month of follow up. All 8 cases were put on medical therapy out of which 6 (10%) were controlled while two cases remained uncontrolled at the end of 2 months of follow up.

After 6 weeks of follow up, 22 eyes (36.66%) had IOP between 11-15 mmHg. 36 eyes (60%) had IOP between 15-20 mmHg. only two had IOP between 21-25 mmHg.

At the end of follow up minimum recorded IOP was 10.2 mmHg and maximum was 24.3 mmHg.

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[44]