DISCUSSION
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The treatment of chronic simple glaucoma has been a challenge to the ophthalmologist and remains to be a puzzle to the modern ophthalmologist even today.

The present study has been conducted in primary open angle glaucoma cases, "to evaluate comparatively between square / triangular scleral flap in trabeculectomy along with 5-FU" with reference to intraocular pressure changes occur in square and triangular scleral flap, the success and complications with 5-FU.

EFFECT OF SQUARE AND TRIANGULAR SCLERAL FLAP ON THE TRABECULECTOMY SURGERY WITH 5-FU:

In total 36 eyes of primary open angle glaucoma were studies. Out of these 18 patients belonged to group A (square scleral flap in trabeculectomy with 5-FU) and 18 patients belonged to group B (triangular scleral flap in trabeculectomy with 5-FU).
Table 13: Comparative effectiveness of trabeculectomy surgery regarding the intraocular pressure controlling in group A and Group B.

<table>
<thead>
<tr>
<th>Group</th>
<th>Eyes Operated</th>
<th>Trabeculectomy Failure</th>
<th>% success</th>
<th>X²</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>18</td>
<td>01</td>
<td>94.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>18</td>
<td>04</td>
<td>77.7</td>
<td>4.11</td>
<td>&lt;0.05</td>
</tr>
</tbody>
</table>

In group A mean intraocular pressure before operation was 30.5±3.16 Hg with a maximum and minimum intraocular pressure of 41.2 mm Hg and 24 mm Hg respectively. Change on 2\textsuperscript{nd} day of operation mean intraocular pressure came down to 20.7±2.82 mm Hg. And subsequently change on 10\textsuperscript{th} day, after 6 weeks, 3 months and 6 months, the intraocular pressure was 19.8±2, 16.8±2, 15.3±1.5, 14.4±2.9 mm Hg respectively. Thus the success rate was found to be 94.4%.

In group B the mean intraocular pressure before operation was 35.80±Hg. On 2\textsuperscript{nd} day of surgery it came down to 23±2.4 mmHg and subsequently, On 10\textsuperscript{th} day was 21±2.8 after 6 weeks was 19.3±2.8 3\textsuperscript{rd} months was 18.3±1.8 and 6 months was 18.6±2.3. Thus the success rate was found to be 77.7%.
Table - 14 Trabeculectomy success rate comparison between group A and Group B.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Statistical Values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X²</td>
</tr>
<tr>
<td>A V/S B</td>
<td>4.11</td>
</tr>
</tbody>
</table>

Mean intraocular pressure after 6 months of study in group A was 94.4% and group B was 77.7% which was statistically significant (X²=4.11, P<0.05).

L.M. Balashova, M.S. Aronskind and A.V.I. Irhina Russian State Medical University, Moscow, Russia has done a study in triangular scleral flap in 1992. They in their study of 24 eyes aged 59 to 73 years with open angle glaucoma and operated. They made triangular scleral flap of 3.5X3.5X2.5 size. After 3 to 6 months follow up period, patients showed 14 to 22 mm Hg intraocular pressure, 1 patient had Hyphema, 1 case had cyst of the filtration pulvinar which disappeared after a puncture by a thick needle, 2 patients had shallow anterior chamber. The decrease of the visual function was not observed.

The postoperative complication in the present study was shallow anterior chamber in only 4 patients and conjunctival flep
failure in 2 patients, scleral flap complication in 3 patients regarding to Triangular scleral flap.

However their study differed from ours study in following aspects -

- They had studied only in triangular scleral flap.
- They used MMC.

Table -15 : Comparison of Present study with the study conducted by L.M. Balashova regarding to Triangular scleral flap.

<table>
<thead>
<tr>
<th>Study</th>
<th>Criteria</th>
<th>Total Cases</th>
<th>Success</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present Study</td>
<td>Successful Trabeculectomy</td>
<td>18</td>
<td>14</td>
<td>77.7</td>
</tr>
<tr>
<td>L.M. Balashova</td>
<td>Successful Trabeculectomy</td>
<td>24</td>
<td>20</td>
<td>83.3</td>
</tr>
</tbody>
</table>

Kimbrough RL et al (1980) observed that the shape of scleral flap (square scleral flap of triangular scleral flap) is not associated with a difference in success rate regarding the intraocular pressure.

In group A post operative complications 2 patient was observed of shallow anterior chamber.
In group B regarding the post operative complications
4 patient had shallow anterior chamber and 2 patient
conjunctival bleb failures, and 3 patient has thin scleral flap.

In comparison to group A and group B post operative
complications of group B were more than that of group A,
which was statistically significant (P<0.05).

Menezo J.L. (1976), observed that shape of the
scleral flap appears to make no difference in the result but
he suggest a very large square flap 5X5 mm. particularly in
Aphakia had a good results for reducing intraocular
pressure.

A Euswas department of Opthalmology, Ramathibodi
Hospital, Faculty of Medicine, Mahidol University, and
Bangkok, Thailand had worked on half thickness triangular
scleral flap in 2001. He said various types of scleral flaps
can be employed including trapezoid, triangular, square or
arch shaped but I prefer the triangular flap and out line the
area of flap by using gentle bipolar or unipolar cauterity. This
flap will facilitate and ease dissection of an external scleral
flap in controlled manoeuvre". 
Dr Binita B, Shelat, Glaucoma Fellow Shankara Netralaya, Chennai and Dr. Ravi Thomas, Schell eye hospital, Christian Medical College Vellore, observed that triangular flap with 5-FU had reduced post operative intraocular pressure and decreased the complications.

Dr Peter Netland Los Angeles California U.S.A. (1998), observed square flap Trabeculectomy in malignant glaucoma. He said, I always used square scleral flap with one suture only, but in this case I would used square scleral flap with 5 suture one on each corner and one on each side of the scleral flap.

Dr Peter Netland Director of Glaucoma and Associate Professor of Ophthalmology at University of Tennessee, Memphis and Dr, David Lee, Chairman, Department of Ophthalmology, Pennstate University Harshey(2001) proposed that square scleral flap surgery remains the GOLD standard for Glaucoma filtering surgery. None penetrating surgery had its proponent, so the majority of USA clinician still performs trabeculectomy by square scleral flap technique.
J. Freedman (1987) also observed that use of square scleral flap to assist in enhancing filtration and prevent complication of filtration surgery.

Detry Morel M. had done a similar study 15\textsuperscript{th} December 2000 which was accepted in 5\textsuperscript{th} April 2001. He had studies on 61 eyes of 48 patents of 64.5±10.5 years mean age group, and mean intraocular pressure (preoperative) was 27.8 ±8.6 mm Hg. A one third limbus based square scleral flap measuring 5X5 mm was dissected and in another cases a deep triangular scleral flap (3.5X3.5X3.5mm) was dissected leaving only a very thin layer of deep sclera over the choroid. A sponge soaked with 5-FU (50 mg/ml) was applied beneath the superficial scleral flap during 3 minutes. Later he observed the mean intraocular pressure was 15.1 ±35 mm Hg in square scleral flap surgery and the post operative complications was 2 within square scleral flap with 5-FU and 9 was within triangular scleral flap with 5-FU .So the success rate of trabeculectomy with square flap with 5-FU was 96.72% and
had significant difference.

Table – 16

Comparison of present study with the study conducted by Detry Morel M. Regarding to Trabeculectomy success rate.

<table>
<thead>
<tr>
<th>Study</th>
<th>Criteria</th>
<th>Square scleral Flap with %-FU</th>
<th>Triangular Scleral flap %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present study</td>
<td>Successful Trabeculectomy</td>
<td>94.4</td>
<td>77.7</td>
</tr>
<tr>
<td>Detry Morel M.</td>
<td>Successful Trabeculectomy</td>
<td>96.72</td>
<td>81.25</td>
</tr>
</tbody>
</table>

Table 16 shows the result of Derty Morel M. studied is very much similar to our study.

Thus the result of present study have made a link between the conclusion of Detry MorelM (2000) study that have reported that the square scleral flap with 5-FU is comparatively better that triangular scleral flap with 5-FU by L.M.Balashova, MenezoJ.L.et.al Joseph Caprioll et al, J, Freedeman (1992, 1976, 1998 and 1987) respectively.