Preventable blindness is one of the many health problems affecting the developing countries. The estimate of global blindness is 45 million people. About 135 million have low vision. High prevalence of blindness is in Asia and Africa mainly due to cataract. In Pakistan age related cataract remains the single major cause of blindness, contributing to 66.7% of the total 1.78% blindness. All the provinces of Pakistan show almost the same percentage of cataract blindness as 70% in Punjab, 73.6% in Sindh, 57.10% in Balochistan and 70% in NWFP.

Cataract is the most common cause of preventable blindness in Pakistan. Different types of anesthesia are used to perform cataract surgery like general anesthesia, topical anesthesia, facial block with retrobulbar block, periconal block and topical. Cataract surgery is usually done under local anesthesia and this is the most preferred method by all ophthalmic surgeons. Periconal anesthesia has replaced retrobulbar anesthesia due to its complications like orbital hemorrhage, brain anesthesia, eye ball perforation etc. Single site transconjunctival local anesthesia is preferable type due to less pain at the time of injection, safety, acceptability and effectiveness.

MATERIAL AND METHOD
A study was conducted to compare the safety, efficacy and acceptability of anesthesia and akesinesia in retrobulbar along with facial block and periconal block.
In this study 150 patients were recruited having age related cataract. The needles used were 25 G x 1.5 inch in retro bulbar; and in periconal block 24 G/1inch. Local anesthetic agents used was mixture of 50% Bupivacaine and 50% Lignocaine. Quantity of anesthetic agent was 7 ml in retro bulbar group while 3 ml in periconal group. A written consent was obtained from every patient. Patients were divided in two groups A & B. In A group, patients received periconal block and in group B, retro bulbar block along with facial block was given. In group A; one drop of proparacaine (Alcain, Alcon Laboratories USA) was instilled before injecting mixture. Exclusion criteria were language barrier, mentally handicapped, deaf and dumb, children and contractures. All surgeries were done by a single surgeon. Type of surgeries were ECCE, ECCE with intraocular lens implant (IOL); Phaco with IOL.

<table>
<thead>
<tr>
<th></th>
<th>Group A n (%)</th>
<th>Group B n (%)</th>
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<tbody>
<tr>
<td>Phaco with IOL</td>
<td>40 (53.3)</td>
<td>43 (57.3)</td>
</tr>
<tr>
<td>ECCE with IOL</td>
<td>25 (33.3)</td>
<td>21 (28)</td>
</tr>
<tr>
<td>ECCE</td>
<td>10 (13.3)</td>
<td>11 (14.7)</td>
</tr>
<tr>
<td>Total</td>
<td>75 (100)</td>
<td>75 (100)</td>
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</table>

A questioner was designed with the following protocol.

**Analgesia**

0  No pain/ discomfort
1  Slight pain but tolerable
2  Mild pain but still tolerable
3  Moderate pain relieved by topical anesthesia
4  Severe pain require more injection

**Anesthesia**

Excellent  Perfect anesthesia no pain
Good       Patient felt pain but tolerable
Fair       Patient felt pain and additional topical drops required to continue
Poor       Not able to continue surgery additional injection required

**Akinesia**

Excellent  No movement at all
Good       Slight movement not interfering surgery
Fair       Moderate movement
Poor       Gross movement need further anesthetic agent to continue surgery

<table>
<thead>
<tr>
<th>Pain score</th>
<th>Group A n (%)</th>
<th>Group B n (%)</th>
<th>Total n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>68 (90.7)</td>
<td>66 (88)</td>
<td>134 (89.3)</td>
</tr>
<tr>
<td>1</td>
<td>4 (5.3)</td>
<td>3 (4)</td>
<td>7 (4.7)</td>
</tr>
<tr>
<td>2</td>
<td>3 (4)</td>
<td>5 (6.7)</td>
<td>8 (5.3)</td>
</tr>
<tr>
<td>3</td>
<td>0 (0)</td>
<td>1 (1.3)</td>
<td>1 (0.7)</td>
</tr>
<tr>
<td>4</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Total</td>
<td>75 (100)</td>
<td>75 (100)</td>
<td>150 (100)</td>
</tr>
</tbody>
</table>

**Observations**

Analgesic effect was evaluated by verbal description of patients and akinesia and anesthetic effect by observation of the surgeon and the questionnaire was filled at the end of each operation.

In A group, patients received single site anesthetic agents through transconjunctival route in lower fornix after a drop of local anesthetic. In group B; facial block was followed by retro bulbar block.

**Acceptability**

95% patients were comfortable at the time of injection in Group A, while 98% patients were not comfortable at the time of injection in Group B.
DISCUSSION

Cataract surgery gets a large share in routine list of ophthalmic surgeon. There are different types of local anesthesia used for this type of surgery like retro bulbar along with facial, periconal two sites, single site periconal and topical anesthesia. Historically cataract surgery was performed without anesthesia. Topical anesthesia was used by Karl Kollar in 1884 as he used cocaine as an anesthetic agent. Retro bulbar anesthesia was first described by Herman Knapp in 1884 as he used 4 % cocaine as ocular anesthetic agent for enucleation. Walter Atkin introduced retrobulbar anesthesia in 1945. There are broad selection of ophthalmic anesthesia needles. In retro bulbar special needles Atkin style 25 G x 1.5 inch, 23 G x 1.5 inch are used. In periconal type of needles used are 25 G x 3/4 inch, 27 G x ¾ inch periconal, 25 G x 1 inch retro bulbar/ periconal.

Concepts and mode of anesthesia are changing for last decades; there was a need to search for a safe, acceptable and effective way of anesthesia. A collaborative study was conducted at Shifa eye clinic Khan Pur and BVH Bahawalpur for this purpose. There are different ways to achieve anesthesia for cataract surgery like general anesthesia, retro bulbar along with facial block, periconal, topical and subtenon anesthesia all around the world. General anesthesia needs special preparation of patients like nothing per oral for at least 6 hours and needs anesthetist to do his job. It has been reserved for children and mentally handicapped patients and patients with nodding of heads. So local anesthesia is preferred by most of the ophthalmic surgeons due to its safety and acceptability to patients. There is a change from local anesthesia with sedation from 45 % in 1991 to 6 % in 1996 and local anesthesia alone from 20 % in 1991 to 86 % in 1997.

Periconal anesthesia is replacing retrobulbar along with facial block due to its complication like orbital hemorrhage perforation of eye ball, injection to optic nerve etc. Low volume of the anesthetic agents used in periconal block along with short and blunt needle make less chances of orbital hemorrhages than retrobulbar anesthesia. Usually periconal anesthesia, injection containing the local anesthetic agent is introduced superonasally and inferonasally by piercing the skin. Skin is the most pain sensitive part of the body. In our study, this part of the body was bypassed by injecting the cocktail in lower fornix through transconjunctival route. We have found the results are comparable between the two groups as for as pain, movements of eye ball are concerned.

So, periconal anesthesia (transconjunctival route) after single drop of alcain is safe, acceptable and effective to patients and surgeon.

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REFERENCE