The Focometer: Use in Aphakic Correction

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The focometer is a monocular hand held device, which is used in natural lighting and allows an individual’s refractive power to be read off a linear dioptre scale. Patients rotate the focometer till the best focus is achieved. For the first time, we used the focometer for aphakic correction in rural India where access to refractive services is poor. Since the focometer reads accurately up to +9 D, it was used in conjunction with a trial frame with +5D lens. In rare instances, it was read with +10 D lenses.

Focometer readings were obtained for 188 cataract-operated eyes, operated on within a four-year period. Focometer refraction improved vision of all aphakes. The presenting vision with available aphakic spectacles was <6/60 in 18.9 per cent. All these patients could be improved with the focometer. Only 3.1 per cent of the patients had a presenting vision of better than 6/18, with available aphakic spectacles. With focometer refraction, 18.0 per cent could be improved to better than 6/18 (See Table).

Aphakic Correction: Benefits

In India, till recently, it was a common practice to dispense universal +10 D spectacles to all cataract operated patients. Nearly 30 per cent of these patients are not satisfied with this correction. Unfortunately, refraction services are only available at upgraded primary health centres, which cover a population of more than 100,000. Thus, operated patients staying in remote rural areas have no alternative but to depend on universal +10 D correction. Many patients, who have lost or broken their initial pair of spectacles, remain technically ‘blind’ after surgery due to poor accommodation, the readings in the present study would not have been affected. This may however create problems in unoperated or younger patients where accommodation may alter the readings.

4. A minor problem encountered was the design of the eyepiece. This is made of rubber and gets distorted and soft in the summer.

5. The major problem is in relation to the cost. At $250, it becomes a costly option for developing countries.

The Focometer: Practical Advantages

In a population with no other means of refraction, the focometer appeared to be a vast improvement over the existing situation. It can help in integrating refraction services into primary health care services, which would be a sustainable alternative because of the lack of trained optometrists and ophthalmic assistants in most of the developing world.

Acknowledgement

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Table: Visual Acuity with Presenting Aphakic Correction and Focometer Correction

<table>
<thead>
<tr>
<th>Visual acuity</th>
<th>Unaided vision</th>
<th>Presenting aphakic correction</th>
<th>Focometer refraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=188</td>
<td>N=156</td>
<td>N=188</td>
<td></td>
</tr>
<tr>
<td>Per cent</td>
<td>Per cent</td>
<td>Per cent</td>
<td></td>
</tr>
<tr>
<td>&lt;3/60</td>
<td>60.8</td>
<td>6.3</td>
<td>0.0</td>
</tr>
<tr>
<td>3/60–&lt;6/60</td>
<td>17.5</td>
<td>12.6</td>
<td>0.0</td>
</tr>
<tr>
<td>6/60–6/12</td>
<td>1.6</td>
<td>37.4</td>
<td>39.3</td>
</tr>
<tr>
<td>&gt;6/12</td>
<td>0.0</td>
<td>39.2</td>
<td>42.5</td>
</tr>
<tr>
<td>6/60–6/6</td>
<td>0.0</td>
<td>2.5</td>
<td>11.7</td>
</tr>
<tr>
<td>&gt;6/6–6/6</td>
<td>0.0</td>
<td>0.6</td>
<td>6.3</td>
</tr>
</tbody>
</table>

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