Factors influencing visual rehabilitation after occlusion therapy in unilateral amblyopia in children

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**Background & objectives:** Amblyopia is one of the most common causes of visual impairment in adults and children, and visual loss may be permanent if not treated in time. Though many studies have been done on occlusion therapy which is the mainstay in the treatment of unilateral amblyopia, discrepancies exist in literature about quantification of treatment and follow up measures. The present study was undertaken to evaluate the factors responsible for the successful outcome of treatment and the optimum time required for the same in children with unilateral amblyopia.

**Methods:** Baseline characteristics of 63 verbal patients with unilateral amblyopia (strabismic, anisometropic, mixed) referred to the Strabismus and Amblyopia Clinic at the Dr Rajendra Prasad Centre for Ophthalmic Sciences, New Delhi between September 2001 to December 2002 who improved to the desired level of visual acuity after treatment for amblyopia in the mentioned time period, were analyzed to assess for factors that directly or indirectly influenced the optimum visual rehabilitation and the average duration of therapy required for the same. The evaluation included assessment of the baseline best-corrected visual acuity (BCVA) and refractive status in both eyes, the age at presentation, the type of amblyopia present, fixation pattern in the amblyopic eye, inter-eye visual acuity difference, and evaluation of compliance through a parental diary system.

**Results:** Baseline BCVA in the amblyopic eye was similar in all the three groups. Patients with anisometropic amblyopia showed a quicker response to therapy. Compliance to treatment was the major factor affecting the overall time required for a successful outcome in most cases. The overall time required for the treatment to be successful (including the period of maintenance) was about 1089 h.

**Interpretation & conclusion:** This hospital-based study showed that the average duration of occlusion therapy to achieve stable isoacuity was 7.2 months with an average occlusion of 6-7 h/day. Compliance to therapy was the most important factor affecting the duration of therapy. With increasing emphasis on paediatric eye diseases, amblyopia is at last getting its due importance as a cause of treatable correctable paediatric visual impairment which can have lifelong repercussions, both in terms of individual disability and financial burden to the society if not treated in time. As the therapy is simple and effective if started early, mass awareness, visual screening, and counselling would go a long way in treating the patients, thus decreasing the prevalence of amblyopia in the country.

**Key words** Amblyopia - compliance - occlusion therapy - visual rehabilitation - visual screening
Amblyopia is one of the most common causes of visual impairment in both children and adults with a prevalence varying between 0.2 and 5.3 per cent depending on the subsets of the population studied. Diagnosis of amblyopia is based on reduced visual acuity, in the absence of any organic lesion accounting for the same in the affected eye. The condition can be bilateral. Other characteristics of amblyopic vision which may affect the quality of vision include reduced spatial sense, decreased contrast, presence of eccentric fixation, etc.

Visual loss due to amblyopia can be permanent if corrective measures are not taken in time. Occlusion of the non-amblyopic eye has remained the mainstay of treatment in cases of unilateral amblyopia. However, considerable inconsistencies have been reported in literature regarding dispensing of occlusion therapy, quantification of treatment, and follow up measures.

We therefore undertook this study to analyze the factors responsible for optimum visual rehabilitation (attainment of isoacuity in the amblyopic eye with respect to the non-amblyopic eye) in patients with strabismic, anisometropic or mixed amblyopia, which remained stable for at least three months after the desired visual acuity was established, and to determine the optimum duration for which occlusion therapy needs to be given in this subset of patients.

**Material & Methods**

All verbal patients between 4 to 12 yr of age with unilateral amblyopia, conforming to the inclusion criteria mentioned below, out of the total number of consecutive new referrals of unilateral amblyopia, presenting to the Strabismus and Amblyopia Clinics at the Dr R.P. Center for Ophthalmic Sciences, All India Institute of Medical Sciences (AIIMS), New Delhi, between September 2001 and December 2002 were included in this analysis. These patients were to demonstrate stable improvement in visual acuity (as assessed for a minimum period of 3 months after achieving isoacuity with the non-amblyopic eye) subsequent to starting occlusion therapy module dependent upon their age at presentation.

Children less than 4 yr of age were not included in the analysis to maintain similarity of assessment of the visual acuity. Similarly children above 12 yr were excluded, as amblyopia therapy is not considered to be very effective after this age. Patients with bilateral amblyopia including pure ametropic amblyopia, sensory deprivation amblyopia, and those who showed non-compliance with spectacles were excluded from the study. Amblyopia was diagnosed after a 4 wk trial of spectacle wear. It was defined as a difference in the best-corrected visual acuity (BCVA) between the two eyes of two or more lines on the Landolt’s C chart or the Illiterate E charts with the non-amblyopic eye having a visual acuity of more than 6/12 on all occasions (the analysis in this study included patients with unilateral amblyopia only).

Ocular examination included assessment of the uncorrected UCVA and the best-corrected spectacle visual acuity (BCVA) with the help of Landolt’s C charts or illiterate E charts in both eyes. The difference of visual acuity between the two eyes in terms of Snellen lines was noted and graded as Grade 1: 2 line acuity difference between both eyes; Grade 2: 3 line acuity difference between both eyes; Grade 3: 4 line acuity difference between both eyes; and Grade 4: > 4 line acuity difference between both eyes.

Refraction under appropriate cycloplegics, assessment of the ocular alignment, ocular motility and associated deviation if any, was performed. Slit lamp biomicroscopy with detailed stereoscopic fundus evaluation was performed in every case for any anterior or posterior segment pathology. The fixation pattern was noted in every case with the help of the Linkz (Fixation) Star attachment in the Heine’s Direct Ophthalmoscope (Heine Beta 200 Ophthalmoscope Head model, Heine Optical Instruments, Germany; Heine USA Ltd., USA). Assessment of the binocular status of the eye was performed whenever possible with the help of the Bagolini’s striated glasses (Richmond Products, Inc, USA), and the TNO Stereo test (Lameris Ootech B.V., The Netherlands).
Standard definitions of different subtypes of amblyopia were used for diagnosis. A senior consultant faculty made the diagnosis in all cases. The criteria used for the diagnosis are listed below:

(i) Strabismic amblyopia: This was defined as amblyopia in the presence of a heterotropia at distance or near fixation in the absence of any anisometropia meeting the criteria for a combined mechanism amblyopia.

(ii) Anisometropic amblyopia: This included patients who had amblyopia in the presence of anisometropia that was 1D or greater in spherical equivalent, or a 1.5 D or greater difference in astigmatism between both the eyes that persisted for at least 4 wk after spectacle correction, in the absence of any measurable heterotropia at distance or near.

(iii) Mixed amblyopia: This included patients with either a heterotropia at distance or near along with anisometropia more than 1 D or more in spherical equivalent or a 1.5 D or more difference in astigmatism in any meridian between both the eyes that persisted after at least 4 wk of spectacle correction.

All patients were prescribed full time high percentage occlusion of the non-amblyopic eye for at least 75 per cent of the child’s waking hours (approximately 8 h/day) with the help of an opaque adhesive patch (either cut from a 2 inch wide 3M Microper adhesive or commercially available as Nexcare Opticlude Orthoptic Eye Patch, manufactured by 3M Nexcare, 3M Corporate Headquarters 3M Center, St. Paul, MN 55144-1000, USA) plastered over the non-amblyopic eye as prescribed, which is the routine mode of prescribing occlusion therapy in our institution.

The regimen practiced and prescribed in our set up is dependent on the age of the patient and is as follows: 0-2 yr = 2:1 (2 days in the non amblyopic eye and 1 day in the amblyopic eye); 2-3 yr = 3:1 (3 days in the non amblyopic eye and 1 day in the amblyopic eye); 3-4 yr = 4:1 (4 days in the non amblyopic eye and 1 day in the amblyopic eye); 4-5 yr = 5:1 (5 days in the non amblyopic eye and 1 day in the amblyopic eye); >5-6 yr = 6:1 (6 days in the non amblyopic eye and 1 day in the amblyopic eye); >6 yr or older = occlusion of the non-amblyopic eye for 30 days with repeated monthly evaluations.

The younger patients (less than 4 yr) were assessed every 15 days for signs of improvement. The older children were evaluated after 30 days. Since the patients included in this analysis were more than 4 yr of age, their assessment was performed every month. If the patient did not come for assessment within a week of their scheduled assessment, they were to be excluded from the analysis for this study. Compliance was monitored with the help of a parental diary system, which consisted of a small notebook where the prescribed module of treatment for that particular patient was mentioned. An hour to hour description by parents, teacher, siblings or friends regarding how long was the prescribed occlusion actually used by the amblyopic child was noted down. The ratio of the number of hours when occlusion was actually used against the number of hours for which it had been prescribed over a period of 1 month (the time for the next follow-up visit) was recorded as a percentage and graded as Grade 1 compliance of 90 per cent or more with the prescribed regimen; Grade 2 compliance between 70 to 90 per cent; and Grade 3 compliance of 70 per cent or less with the prescribed regimen.

This system has the intrinsic bias of the observers not noting down the actual occlusion time properly. However, it does offer some objectivity and those patients that are observed to be irregular can automatically be put into the Grade 3 category.

The end-point of therapy (successful outcome) was taken to be stable isoacuity between both the eyes maintained for a period of at least three months (the amblyopia therapy was to continue during this period). The total duration of therapy as evaluated for each patient included these three months of maintenance therapy. In patients with strabismic and mixed amblyopia this indicated a change of the occlusion regime to 1:1 (1 day over the previously amblyopic eye and one day over the non-amblyopic eye) with the appropriate refractive correction worn. In patients with anisometropic amblyopia, partial
occlusion with nail varnish painted over the back of the spectacles or graded layers of cello-tape plastered over the back of the spectacles in the non-amblyopic eye was prescribed.

In case of any regression in the BCVA in this period of more than 2 lines, the patients were excluded for the purpose of this analysis. If the patients met the success criteria, they were subsequently taken up for strabismus surgery, contact lens fitting or both as the case may be. This subsequent management was however not a part of this analysis.

The age of presentation, gender, the depth of amblyopia (as assessed by the BCVA at presentation), the inter-eye BCVA difference, the refractive errors and the fixation pattern seen in the amblyopic eye, the compliance monitoring and the time taken for the patient to achieve stable isoacuity in the amblyopic eye equal to that in the non-amblyopic eye were factors taken up for statistical analysis, in those patients who had a successful outcome. The BCVA in Snellen notations were converted to Snellen fractions and the logarithm of the minimum angle of resolution (logMAR values) and both were used for statistical analysis.

The results were analyzed using the relevant statistical methods (‘t’ test, correlations, regression analysis, single factor ANOVA and the Pearson’s χ² test).

Results

We evaluated factors, which may have contributed to the establishment of stable BCVA, equal to the non-amblyopic eye, in children with unilateral amblyopia, undergoing occlusion therapy at our tertiary ophthalmic referral center. After a successful outcome, the occlusion therapy was discontinued and the patients were either taken up for strabismus surgery or were prescribed glasses or contact lenses as indicated.

A total of 281 consecutive new referrals [strabismic (128), anisometropic (88), mixed (65)], presented to the Strabismus and Amblyopia Clinics at our Centre during the study period. Of these, 63 patients were included in the study 31 of whom were diagnosed as cases of strabismic amblyopia (SA), 17 as anisometropic amblyopia (AA) and 15 as cases of mixed amblyopia (MA- strabismic and anisometropic). Four patients who had presented in August 2001, with accurate follow up records, whom we subsequently assessed regularly during the study period, were also included in the final analysis.

Age of presentation and gender: The average age of presentation was 7.34 ± 5.6 yr. However, patients with anisometropic amblyopia presented at a relatively later age (Table) but the difference was not significant. The group consisted of 27 male and 36 female patients.

Best corrected visual acuity (BCVA): The average BCVA in the amblyopic eye (on the basis of the Snellen Fractions and the log of the minimum angle of resolution - logMAR) was 0.212 ± 0.09 (-0.716 ± 0.23 logMAR units). The median BCVA was 0.25 corresponding to 6/24 on the Snellen’s charts (Table). It is of significance to note that the differences in the BCVA at presentation in the amblyopic eye in the three groups were not statistically significant.

The average BCVA in the non-amblyopic eye was 0.812 ± 0.192 (-0.092 ± 0.102 log MAR units) with the median BCVA being 0.66 (6/9 on the Snellen’s chart). Patients with SA had significantly less BCVA in the sound eye as compared to their counterparts with AA (P<0.001) and MA (P<0.005).

The difference in the BCVA of the amblyopic and the non-amblyopic eye was significant in all the three groups (P<0.001). The average inter-ocular BCVA difference was 3.92 ± 0.148 Snellen lines (median of 4 lines). However, the baseline BCVA in the sound eye of patients with SA was less as compared to the other groups, the average line acuity difference in patients with SA was 3.51 ± 0.21 lines as compared to patients with AA (4.11 ± 0.25) and MA (4.53 ± 0.25). This difference was statistically significant when comparing patients with SA and AA (P<0.05) and patients with SA and MA (P<0.005).
<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Total (n=63)</th>
<th>SA (n=31)</th>
<th>AA (n=17)</th>
<th>MA (n=15)</th>
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<tbody>
<tr>
<td>Age at presentation (yr)</td>
<td>7.3 ± 5.6</td>
<td>7.3 ± 5.9</td>
<td>8.2 ± 5.7</td>
<td>6.3 ± 3.7</td>
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<tr>
<td>Gender:</td>
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<tr>
<td>Male</td>
<td>26</td>
<td>12</td>
<td>7</td>
<td>7</td>
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<tr>
<td>Female</td>
<td>37</td>
<td>19</td>
<td>10</td>
<td>8</td>
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<tr>
<td>BCVA (amblyopic eye):</td>
<td></td>
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<tr>
<td>Snellen fraction</td>
<td>0.212 ± 0.09</td>
<td>0.219 ± 0.09</td>
<td>0.231 ± 0.085</td>
<td>0.178 ± 0.091</td>
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<td>logMAR units</td>
<td>- 0.716 ± 0.23</td>
<td>- 0.706 ± 0.24</td>
<td>- 0.662 ± 0.19</td>
<td>- 0.801 ± 0.24</td>
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<tr>
<td>BCVA (non-amblyopic eye)</td>
<td></td>
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<tr>
<td>Snellen Fraction</td>
<td>0.812 ± 0.192</td>
<td>0.699 ± 0.142</td>
<td>0.971 ± 0.126</td>
<td>0.865 ± 0.202</td>
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<tr>
<td>logMAR Units</td>
<td>- 0.092 ± 0.102</td>
<td>- 0.155 ± 0.079</td>
<td>-0.015 ± 0.06</td>
<td>- 0.074± 0.11</td>
</tr>
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<td>Inter-eye acuity difference:</td>
<td>3.92 ± 0.148</td>
<td>3.51 ± 0.21</td>
<td>4.11 ± 0.25</td>
<td>4.53 ± 0.25</td>
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<td>Grade 1</td>
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<td>Grade 3</td>
<td>15</td>
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<td>Grade 4</td>
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<td>Refractive errors:</td>
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<td>Central</td>
<td>55</td>
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<tr>
<td>Eccentric</td>
<td>8</td>
<td>5</td>
<td>0</td>
<td>3</td>
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<tr>
<td>Wandering</td>
<td>0</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>Duration of therapy:</td>
<td></td>
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<tr>
<td>Total duration (months)</td>
<td>7.2 ± 6.4</td>
<td>7.8 ± 7.3</td>
<td>6.0 ± 3.1</td>
<td>7.3 ± 6.8</td>
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<tr>
<td>(6, 4-14)</td>
<td>(8, 4-14)</td>
<td>(6, 4-10)</td>
<td>(7, 4-14)</td>
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<tr>
<td>Total occlusion (h)</td>
<td>1089.82 ± 48.61</td>
<td>1189.89 ± 80.02</td>
<td>966.91 ± 69.3</td>
<td>1020.21 ± 79.57</td>
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<td>(1036.8, 560-2520)</td>
<td>(1075.2, 560-2520)</td>
<td>(960, 624-1572)</td>
<td>(1086.8, 672-1872)</td>
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<tr>
<td>Occlusion (h/day)</td>
<td>6.72 ± 0.155</td>
<td>6.59 ± 0.214</td>
<td>7.12 ± 0.14</td>
<td>6.55 ± 0.45</td>
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<tr>
<td>(7.2, 2-7.8)</td>
<td>(6.8, 2-7.8)</td>
<td>(7.4, 6-7.8)</td>
<td>(7.5, 2-7.8)</td>
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<tr>
<td>Occlusion (h/wk)</td>
<td>39.24 ± 0.97</td>
<td>38.52 ± 1.52</td>
<td>42.23 ± 1.1</td>
<td>37.38 ± 2.69</td>
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<td>(42, 12-46.8)</td>
<td>(39, 14-46.8)</td>
<td>(44.2, 30-46.8)</td>
<td>(43.2, 12-46.8)</td>
<td></td>
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</table>

Values are mean ± SD (mean, range)
BCVA, best corrected visual acuity; SA, Strabismic amblyopia; AA, anisometropic amblyopia; MA, mixed amblyopia; logMAR, logarithm of the minimum angel of resolution
The difference in inter-ocular BCVA in patients with AA and MA was not significant. The BCVA in the amblyopic eye did not show any significant correlation with the age of presentation. Similarly, the attainment of the desired BCVA after treatment also did not show any significant correlation with the age of presentation.

Refractive errors in the amblyopic eye: Twenty nine patients had hypermetropic refractive error in the amblyopic eye as compared to 17 patients with myopia and 17 with emmetropia (only in cases of SA). The average magnitude of the refractive errors in patients with SA was $2.32 \pm 0.17D$, $2.88 \pm 0.19D$ in patients with AA and $2.6 \pm 0.18D$ in patients with MA. The difference in the magnitude of the refractive error was significant when one compared patients with SA and AA ($P<0.05$), with patients of pure AA showing higher magnitudes of refractive errors. The differences were not significant between patients of AA and MA, and patients of SA and MA.

The refractive error did not show any significant correlation with the BCVA. However, patients with SA demonstrated a higher negative correlation ($r= -0.448$, $P< 0.05$, df = 60) indicating that lesser the dioptric power of the eye, better was the BCVA at presentation. No such correlations were discernable for patients with AA and MA.

Fixation pattern in the amblyopic eye: Based on the Linkz (Fixation) Star configuration with central grid of the standard Heine’s Direct Ophthalmoscope, the fixation patterns of the amblyopic eyes were grossly divided into central fixation (foveal, unsteady foveal, perifoveal) where the reflex was definitely present within the central $3^\circ$, eccentric fixation which took into account any fixed fixation point that was beyond the central $3^\circ$, and lastly, wandering or no fixation. Of the 63 patients, 55 (87.3%) had central fixation. This included all patients with AA. No patient had wandering fixation. The age and BCVA at presentation and the refractive error did not show a significant correlation with the fixation pattern.

Compliance: Compliance to therapy was monitored by a parental diary system; 58 patients (92.04%) showed a compliance of more than 70 per cent of the prescribed schedule (Table). On performing a regression analysis taking compliance as the dependent variable, we found that only the age at presentation had a significant relation ($P< 0.05$) with the compliance seen. The older the child, more was the compliance to therapy. Poor visual acuity in the amblyopic eye, eccentric fixation or higher refractive errors did not significantly affect compliance to therapy, thus indicating that once the child had understood the need for undergoing treatment, there was greater compliance even if the BCVA in the amblyopic eye was poor.

Duration of therapy: The average duration taken by all the patients to achieve a stable isoacuity (which did not change over a period of 3 months after isoacuity was achieved) was $7.2 \pm 6.4$ months. The average occlusion undertaken was $6.72 \pm 0.155$ h/day. This corresponded to about $39.24 \pm 0.97$ h/wk and an overall average of $1089.32 \pm 48.61$ h/patient. It is interesting to note that patients with AA required significantly less time ($6 \pm 3.1$ months) than their counterparts having SA ($P<0.005$) or MA ($P<0.05$) to achieve stable BCVA in the amblyopic eye equal to that in the sound eye. Such a significant difference in duration was not seen when patients with SA and MA were compared (Table). Patients with AA were found to have undertaken an average of $7.12 \pm 0.14$ h of occlusion per day, which was significantly more than that taken by patients with SA ($P<0.05$).

On performing a multiple regression analysis taking the duration of therapy as the dependent variable, the only factor found to be significantly affecting the same was compliance to therapy ($P<0.001$).

Discussion

Occlusion therapy for most waking hours has been the time tested modality of treatment for cases with unilateral amblyopia. Though trials which are
evaluating cosmetically more acceptable alternatives to occlusion, like pharmacological penalization\textsuperscript{17} are on, till such alternatives are established as being equally effective as occlusion in maintaining the improvement in the visual acuity in the amblyopic eye on a long-term basis, occlusion would still remain the core of amblyopia treatment.

Opinions vary on the hours of occlusion that should be prescribed for optimal results\textsuperscript{9-19}. To maximize the visual acuity outcomes, most ophthalmologists recommend a minimum of 3 trials of high percentage (> 75% of all waking hours) occlusion without any measurable improvement in visual acuity before classifying the case as one of occlusion failure\textsuperscript{13,16,17}. Insufficient occlusion trial may result in sub-optimal restoration of visual acuity.

Lack of compliance is often blamed as a major reason for the failure of occlusion therapy\textsuperscript{9-20}. As the burden of administrating occlusion therapy often falls on the parents, explaining the procedure increases the acceptability and compliance in both the patients and the parents. Parental diary keeping is the conventional mode of monitoring compliance clinically, which has compared favourably with objective evaluation of compliance through devices like the Occlusion Dose Monitor which may not be financially viable in a developing country like ours for mass scale use\textsuperscript{9,21-23}.

The present study was hospital-based, and took into consideration factors responsible for the establishment of equal visual acuity in the amblyopic eye of patients with unilateral amblyopia after undertaking high percentage full time occlusion therapy. The relatively older age of the patients at presentation is due to the fact that they were referred patients coming to the hospital and not those who had been screened in the community.

Snellen’s charts were used for visual acuity evaluation in this study, which may not be the best method to evaluate the visual acuity in patients with amblyopia\textsuperscript{13,24,25}. The reason why it was used by us was its wider availability in the country, which made it more acceptable than other charts for pre-verbal paediatric visual acuity assessment that are not easily available outside apex centres. The aim was to maintain similarity and uniformity of examination in all children.

Compliance to amblyopia therapy, as observed in other studies\textsuperscript{9-23}, was the most important factor for its success in the present study. It showed a significant positive correlation with the age of the patient, which implies that once the patient is old enough to have understood the benefits of therapy, he or she is likely to follow the regimen more regularly. This was irrespective of the depth of amblyopia present in the affected eye. Good compliance has been shown to be an important factor resulting in appropriate visual rehabilitation even in older children\textsuperscript{20}. It also decreases the duration of therapy required.

Patients with pure anisometropic amblyopia responded better as a group. Though the age of presentation was older in this group as compared to the other two groups, and there were no significant differences in the baseline visual acuity in the amblyopic eyes of the patients in any of the groups, these patients were found to be more compliant with therapy. They used the patch for a significantly longer duration per day thus decreasing the overall occlusion hours required per patient.

An unusual finding in this study, also noted in another study\textsuperscript{17}, was that the visual acuity in the sound eye of patients with strabismic amblyopia was significantly less than that seen in patients with anisometropic and mixed amblyopia. The reason for this is not well defined and is open to future trials\textsuperscript{8,17}.

We observed that the average duration of therapy (including 3 months where the visual acuity was maintained at the same level) was about 1100 h of full time occlusion with an average of about 7-8 h of occlusion per day depending on the age of the patient. Subtracting the 3 months maintenance therapy, this approximated about 600 h/patient, similar to the value of 400 h mentioned in a previous study\textsuperscript{13}. However, determining an optimum period for which occlusion therapy should be given before labeling the patient...
as a case of occlusion failure, requires a long-term continued analysis of patients undergoing treatment who did not improve to the desired level of post-treatment visual acuity during the period of evaluation.

Amblyopia can cause significant morbidity both in terms of loss of vision and the socio-economic and financial burden related to the duration of life that one has to spend with this disability. Sub-optimal visual acuity is a disqualification for many jobs. The cost effectiveness of interventions for amblyopia therapy has been found to be much better than that for many other chronic conditions like hypertension as the benefits derived are acquired at a very young age and stays for a life time if properly dispensed at the right time. Though regression of visual acuity with time can be as much as 50 per cent in patients who have undergone successful occlusion therapy, it has been observed that the final visual acuity is significantly better with treatment than without it. It has been elucidated that there is an increased risk of loss of vision in the better eye in patients with amblyopia, which may add to the visual impairment. Though there have been reports on improvement of vision in the amblyopic eye when the non-amblyopic suffers some visual insult in adulthood, this has not been seen in more than 25-30 per cent cases. This improvement in the vision in the amblyopic eye has been noted to be more common in patients who had undertaken some form of amblyopia therapy, thus unequivocally establishing the role of appropriate and adequate treatment for amblyopia in childhood.

Effective counselling towards increasing the compliance to treatment, both in the patients and their parents, and maintaining a regular follow up would be appropriate measures to deliver proper therapy for amblyopia, a condition that can no longer be considered to be subliminal in magnitude in the country. Appropriately planned randomized trials in the community may be helpful in scientifically addressing questions related to the best method for screening for amblyopia, the optimum duration of therapy, the upper age limit till where it can be effectively started, and efficacy of alternative therapies to occlusion.

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