PREVALENCE OF ASTHENOPIA WITH AGE AND GENDER PREDISPOSITION IN RIO, PGIMS, ROHTAK

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ABSTRACT

BACKGROUND
Growing computer dependency and similar electronic equipment use have increased the prevalence of asthenopia in children and adolescents interfering with their attention and academic performance.

The aim of this study is to evaluate the prevalence of asthenopia with age and gender predisposition in a tertiary centre.

MATERIALS AND METHODS
We studied retrospective case series of 1057 patients over a period of 30 days in the month of June 2016, in which the total versus the patients referred for orthoptic exercises was analysed.

RESULTS
Out of the 9221 patients who attended OPD, 1057 subjects suffered from asthenopia. 45.98% patients were seen in the 11-20 years of age. Marginally higher proportion of asthenopia was noted in females (56.29%) compared to males (43.71%). The prevalence of asthenopia came to be 11.46% involving young population mainly.

CONCLUSION
Prevalence of asthenopia is quite significant among young population between 11-20 years of age. Female predominance was clearly seen. The consequence of asthenopia in children and adolescents interferes with attention and academic performance.

KEYWORDS
Computer Dependency, Retrospective, Prevalence, Young, Interferes, Academic Performance.

The patients were eligible for inclusion into the study if they had asthenopic symptoms, such as problems in reading and while doing near work had blurred vision or headache and had no prior history of strabismus surgery. Only patients with convergence insufficiency (defined as near point of convergence with RAF rule more than 6 cm and a fusional vergence insufficiency with positive fusional vergence amplitude less than 20 degrees estimated with major amblyoscope) were included. Refractive errors were corrected before initiating the exercises.

RESULTS

In our study, total 1057 patients were studied over a period of 30 days. Maximum number of patients were seen in the age group 11 – 20, which comprised of 486 (45.98%).

54.91% of the total patients who attended OPD were males.

<table>
<thead>
<tr>
<th>Age (Yrs.)</th>
<th>No. of Pts.</th>
<th>Percentage of Asthenopia (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 10</td>
<td>164</td>
<td>15.52</td>
</tr>
<tr>
<td>11 - 20</td>
<td>486</td>
<td>45.98</td>
</tr>
<tr>
<td>21 - 30</td>
<td>281</td>
<td>26.58</td>
</tr>
<tr>
<td>31 - 40</td>
<td>106</td>
<td>10.03</td>
</tr>
<tr>
<td>41 - 50</td>
<td>20</td>
<td>1.89</td>
</tr>
<tr>
<td>Total</td>
<td>1057</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 1. Age Wise Distribution

In our study, total 1057 patients were studied over a period of 30 days. Maximum number of patients were seen in the age group 11 – 20, which comprised of 486 (45.98%).

<table>
<thead>
<tr>
<th>Sex</th>
<th>OPD Attendance</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td></td>
<td>5063</td>
<td>9.13</td>
</tr>
<tr>
<td></td>
<td>Asasthenopia</td>
<td>462</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>4601</td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td>4158</td>
<td>14.31</td>
</tr>
<tr>
<td></td>
<td>Asasthenopia</td>
<td>595</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>3563</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4158</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>14.31</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1057</td>
<td>11.46</td>
</tr>
<tr>
<td></td>
<td>8164</td>
<td>9221</td>
<td>11.46</td>
</tr>
</tbody>
</table>

Table 2. Total Patients Attending Eye OPD in a Month

Table 3. Comparison between Total and Asthenopic Patients

Chi-Square value = > 60.471
P value = > 0.001

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 10</td>
<td>90</td>
</tr>
<tr>
<td>11 - 20</td>
<td>223</td>
</tr>
<tr>
<td>21 - 30</td>
<td>110</td>
</tr>
<tr>
<td>31 - 40</td>
<td>32</td>
</tr>
<tr>
<td>41 - 50</td>
<td>74</td>
</tr>
<tr>
<td>Total</td>
<td>462</td>
</tr>
</tbody>
</table>

Table 5: Sex and Age Groups Cross Tabulation

DISCUSSION

Out of the 9221 patients who attended OPD, 1057 subjects suffered from asthenopia; 45.98% patients were seen in the 11 – 20 years of age. Similar age slot was seen in a study conducted by Cheng-Cheng Han et al., as participants aged from 17 to 28 years and their average age was 21.4 years. Similar kinds of results were seen in a study done by Bhanderi DJ, as three-fourths of the subjects were young with age of 15 to 25 years.
Marginaly, higher proportion of asthenopia was noted in females (56.29%) compared to males (43.71%). Likewise, 279 (66.6%) females were involved in a study done by Bhanderi DJ et al. Average age of the patients was 21.4 years and 58.7% were males in a study done by Cheng-Cheng Han et al. The prevalence of asthenopia came to be 11.46% in our study, while Sanchez-Roman et al found this prevalence to be as high as 68.5% in their study in Spain. While female predominance was seen in asthenopic patients, male outnumbered in total patients attending the OPD and this was statistically significant in our study, while in some other study the results showed that the difference between males and females was not significant (> 0.05). Mean age in our study lies in the range of 17.27 - 19.77, thus involving young population mainly. This seriously affects their performance, as children might lose their interest in the studies. The drawback of our study was short number of case groups, as we only took data of one month. So now we are also doing a retrospective detailed study of a larger group of patients involved in near work, suffering from asthenopia along with refractive status taken into account for a better analysis.

CONCLUSION

Prevalence of asthenopia is quite high among young population between 11 - 20 years of age. Female predominance was clearly seen. The consequences of asthenopia in children and adolescents interfere with attention and academic performance. Thus, young population needs to be counselled to maintain a balance between near work and outdoor activities.

REFERENCES