ORIGINAL ARTICLE

Frequency and Causes of Uniocular Amblyopia in Children.

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ABSTRACT

Aim: Todetermine the frequency and causes of uniocular amblyopia in children age 6-14 years visiting a tertiary care hospital.

Study Design: Cross-sectional hospital based study**.**

Duration and Settings of Study: The study was conducted from 7 October to 7 November 2019 in the Department of Ophthalmology at Hayatabad Medical Complex, Peshawar.

Methods: All children of age 6-14 years of both genders were included in the study. Visual acuity (VA) of these children was measured using Snellen visual acuity chart. Objective refraction was done using autorefractometer. After subjective refraction, any two lines difference in VA of both eyes, were considered as uniocular amblyopia. Amblyopia was classified as mild if visual acuity is 6/9 to 6/12, moderate amblyopia if VA is worse than 6/12 to 6/36, and severe amblyopia if VA is worse than 6/36. Analysis of data was done by using SPSS version 20.

Results: Out of total 360 children examined, 39 had uniocular amblyopic. Out of these 39 children, 23 (58.97%) were male and 16 (40.03%) were female. Among 39 uniocular amblyopic children, strabismic amblyopia was found in 15 (38.46%) children and10 (25.46%) children had anisometropic amblyopia. Fourteen 14 (35.89%) children had combined amblyopia (having strabismus and anisometropia both). Among the total uniocular amblyopic children, 21 (53.85%) were esotropes, 8 (20.51%) were exotropes and 10(25.64%) had straight eyes.

Conclusions: This study showed that uniocular amblyopia is more common in male. The most common cause of uniocular amblyopia is strabismic amblyopia.

Keywords: Amblyopia, Refractive Error, Strabismus, Visual Acuity

INTRODUCTION

Amblyopia, generally known as "lazy eye", is the term utilized to depict a sort of decreased vision that creates (develop or formed) in childhood.[1] Amblyopia is traditionally described as a discount in adjusted visual acuity (VA) in deficiency of seen natural anomalies and is because of misapplied, hazy, or lacking retinal images through advancement of the visual system. Amblyopia occurs due to media opacities, strabismus, cataracts and anisometropic refractive error that cause one eye at a growing drawback to the other. Amblyopia commonly takes place singly however be able to follow jointly with cataracts of both eyes or excessive refractive errors.[2-4] Amblyopia is the utmost collective reason for uniocular vision loss in youngsters.[5] One of the main goals of timely management of conditions like strabismus is the avoidance or inversion of amblyopia.[6] The strabismus can be handled by prism

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exists despite of handling the underlying strabismus. It may also be because of the lacking of visible stimuli, consisting of masking one eye or dwelling in whole darkness. Amblyopia has been classified principally based totally at the circumstance idea to be its cause, mostly strabismus or anisometropia or a few aggregates of both.[7] The resultant amblyopia will be more severe when there is an intense visual deprivation. The integral duration for visible improvement is approximately the initial seven years of life and even months being the most precarious.[8] The later the amblyopia therapy starts, the more difficult it overturns clinically. Even a child with a congenital cataract may lead to irreversible amblyopia within few months. With binocular, similarly dense congenital cataracts, there is a bit extra pliability, typically several weeks.[9,10]

Amblyopia therapy of patching for the non-amblyopic eye commenced in the sixteenth century. It stays the backbone of remedy even to date.[11,12] The precise stage at which amblyopia remedy turns into vain is not yet evenly planned. Although, The Pediatric Eye Disease Investigator Group confirmed that amblyopia therapy is more effective in children with the age group from 7 to 12 years than that of 13 years and above .[13] The using of correct refractive correction will reduce the unusual impediment by progressing the standard of the retinal image.[14]Amblyopia occlusion therapy is based on the notion that amblyopia is mainly a uniocular vision disorder. However, there is increasing evidence that patients with amblyopia have an anatomically entire binocular visual system that becomes functionally uniocular for suppression.[15] Amblyopia is a major public health problem. It is thought to develop early in life during the critical period of visual development. Early recognition of amblyopic causes such as strabismus, anisometropic and stimulus deprivation can facilitate early treatment and increase the chances for recovery of visual acuity. That is why we designed this study to find out the frequency of uniocular amblyopia and its causes gender wise and also to find out the most frequent cause of uniocular amblyopia among age group of 6-14 years visiting eye unit at Hayatabad Medical Complex, Peshawar.

METHODS

Our study was a descriptive hospital based study, in which we used purposive sampling technique. All children of age 6-14 years of both genders who came to the Eye Unit HMC Peshawar in 1-month duration from 7th October to 7th November 2019 were included in the study. Children outside the age limit of the research were excluded. In this study, we used a self-made questionnaire. Ethical approval was obtained from Ethical Committee of Pakistan Institute of Community Ophthalmology. After taking consent from the parents of the children, data was collected. Data was recorded at Orthoptics clinic in Hayatabad Medical Complex Eye Unit Peshawar. Visual acuity was checked with a Snellen vision chart, the children who have reduced visual acuity in one eye after objective and subjective refraction without any organic cause were categorized as amblyopic. The cause of amblyopia was also noted. To obtain frequency, data was entered into the SPSS version 20 for analysis.

RESULTS

The total number of children coming to eye OPD in this study duration were 360, out of which 39 had uniocular amblyopia. Out of these 39 children, 23 (58.97%) were male and 16 (40.03%) were female. Among these 15(38.46%) cases were of strabismic amblyopia, 10 (25.46%) cases of anisometropic amblyopia, and 14 (35.89%) cases of combined amblyopia. The distribution of types of amblyopia gender-wise is presented in table 1. Types of deviation in uniocular amblyopia are described in table 2. The causes of uniocular amblyopia in different age groups are given in table 3.

Table 01: Gender wise distribution of participants on the basis of type of amblyopia (n=39)

Causes	Gender	n	%
Strabismic amblyopia	Male	7	17.95
	Female	8	20.51
Anisometropic amblyopia	Male	8	20.51
	Female	2	5.13
Combined amblyopia	Male	8	20.51
	Female	6	15.39

n=number %=percentage

Table 02: Frequency of uniocular amblyopia versus type of deviation (n=39)

Type of Deviation	Frequency	%
Orthrophoria	10	25.64
Esotropia	21	53.85
Exotropia	8	20.51

n=number %=percentage

Table 03: Causes of uniocular amblyopia in different age group

Age Group	Causes	n	%
6-8 years (n=13)	Strabismic amblyopia	8	61.53
	Anisometropic amblyopia	2	15.38
	Combined amblyopia	3	23.08
9-11 years (n=10)	Strabismic amblyopia	3	30
	Anisometropic amblyopia	4	40
	Combined amblyopia	3	30
12-14 years (n=16)	Strabismic amblyopia	4	25
	Anisometropic amblyopia	4	25
	Combined amblyopia	8	50

n=number %=percentage

DISCUSSION

Amblyopia is a relatively common disorder and affects up to 5% of the general population. In this study, the frequency of male amblyopic patients was high (58.97%) as compared to the female (41.02%). In literature, a previous study reported a high frequency of amblyopia in males which was 63% as compared to females (37%).[16]

This study reveals different causes of amblyopia such as strabismic, anisometropic, combined and stimulus deprivation. The result of this study of different causes of amblyopia matches with the study done by Oscar et al.[17]In our study, we found strabismic amblyopia in 38.46%, anisometropic amblyopia in 25.46%, and combined amblyopia in 35.89% of children with amblyopia. Our findings differ from those of the studies in the literature that had slightly greater number of patients with amblyopia due to anisometropia than due to strabismus.[16] The main reason for the higher frequency of strabismic amblyopia in our study is that there are more cases of esotropia and unawareness of visual impairment due to strabismus.

Twenty-one (53.85%) of cases having strabismic amblyopia in our study were due to esotropia. This supports the view that convergent squint is more susceptible to cause amblyopia than divergent type. Long-standing strabismus may additionally lead to anisometropia. It is obligatory to get better facilities for checkups and regular eye screening. This study emphasizes need for time-to-time eye checkup for children. Amblyopia is a great public health issue. Early identification of causes of amblyopia such as squint, anisometropic and stimulus deprivation can ease early management and enhance the chances for

CONCLUSIONS

Amblyopia was more common in male . The common cause of amblyopia was strabismic amblyopia. Amblyopia was frequently occurring in esotropes. Anisometropic amblyopia is less common than strabismic amblyopia.

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