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Correlation between headache and refractory error in school children with complaints of headache in a tertiary health care hospital.

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Abstract
***Background**: Headache is most common complaint in children and adolescent.Frequent headache can have enormous impact on life .*
***Aim**: To evaluate refractive errors among school going children with complaint of headache and to compare it with children without headache.*
***Methodology**: This is a cross-sectional study. 402 school children with complaint of headache and 402 children without headache aged between 8 and 17 years was taken for study.*
***Results**: In headache group 259 (64.5%) were girls and 143 (35.5%) were boys and 228 (56.7%) girls and 174 (43.3%) boys in without headache group. Mean age of the participants was 12.23 ± 2.21 years in headache group and 13.43±1.96 years in non headache group. In headache group 218(54.2%) children had refractive errors, 130 (59.6%) had astigmatism,58 (26.6%) had hypermetropia and 30 (13.7%) had myopia. In non headache group 68 (16.9%) children had refractive errors, 47 (69.1%) had myopia, 12 (17.6%) had hypermetropia and 9 (13.2%) had astigmatism($p<0.05$).*
***Conclusions:** there is relationship between headache and refractive errors. An ophthalmologist and paediatrician can play a vital role in the prevention, control treatment of headache complaints in school children.*

***Key word:** Headache , Refractive errors, Hypermetropia, Myopia , Astigmatism*

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I. Introduction:

Headache is most common complaint in children and adolescent. headache is defined as pain located above orbitomeatal line[1]. Frequent headache can have enormous impact on life of child and reflect in school absences and decrease school performance, social withdrawal and change in family interaction [2].Two types of headache primary and secondary headaches. Primary headaches are migraine and tension–type headache. Secondary headache involves headache that having underlying illness [2]. Primary headaches are not associated with any structural, metabolic or other lesion of the body whereas secondary headaches have some exogenous disorders. Diagnosis and treatment of the headache is often difficult without knowing theaetiology. worldwide epidemiological studies have reported attack of headache at least once a year in 57.82% school children. By the age of 15, chronic recurrent headache occurs in 75% children. In previous studies, the prevalence of refractive errors reported varies substantially from 13 to 80% in general population depending on geographical area and age group[3,4]. Refractive error was considered to be a possible cause for headache in some previous reports[5].The assessment of headache in children is challenging and an accurate assessment is essential for its diagnosis and treatment. The school children are frequently referred to paediatrics clinics for headache. Pain is typically mild, behind the eyes, absent in the morning and relieved with eye rest. Proper refractive correction can improve headache in over 70% related to refractive error [6]. prevalence of primary headache in India varies 9-11% in school children and uncorrected refractive errors in children vary from 2.63% to 14.7%[7,8,9]. Headache is common in girls. Its prevalence rate decreases at the advanced age [10]. A careful ocular examination and a possible correction of the refractive errors have been observed to reduce the symptoms of headache. In the literature various authors have claimed that spectacles for correction of low degree of refractive errors are effective to relieve headache symptoms [11]. Thomas et al [12] observed that 21% of patients with headache consult ophthalmologist and Whittington et al [13] reported that 45% patients attending for refraction had complaint of headache. Gordon et al in 1966 observed that minor refractive errors often cause more headache and symptoms of eyestrain than major errors [14].Considering headache is a serious burden to

children, this study was aimed to determine the relation between refractive errors and headache among children of 8 to 17 years old attending the outpatient department.

II. Materials And Method

This is a cross-sectional study was conducted over a period of one year from 31 thJanuary 2019 to 31 th January 2020 in paediatrics outpatient department in collaboration with ophthalmology department. We included 402 children with headache complaints asheadache group and 402 children without headache having same age group came to outpatient department for minor illness as non headache group. The diagnosis of secondary headache was done according to International Classification of Headache disorders: 3rd edition (Beta version), based on physical and neurological examinations, relevant investigations, CT and/or MRI scan of brain. All the investigations were done according to Helsinki declaration. Informed consent was taken from guardians of all participants.Based on questionnaires every child was asked whether they suffered from headache or not. If the answer was negative, he/she was considered as a non headache. We included subjects with positive response in our study. The subjects were interviewed with structured questionnaires about demographic data (age, sex) and to identify the subjects having headache associated with refractive errors (HARE) according to current HIS diagnostic criteria. Children having other types of headache were excluded from the study. The participants in the study group were then asked about frequency, location, time of onset, duration, severity and intensity of headache. It also included presence of any aggravating factors, family history and history of trauma, medical history, dental caries, sinusitis, features of raised intracranial pressure, menstrual disturbances, previous ocular surgeries and use of medicines. School children with systemic diseases like migraine, tension-type headache, sinusitis, and intake of medicines, dental caries that cause headache or ocular conditions like amblyopia, squint, acute glaucoma, uveitis optic neuritis were excluded from the study. Visual acuity was measured in each eye at 6 meters distance with internally illuminated Snellen's chart and near vision was recorded at 33 cm with Jagger's chart under good illumination. Refractive error was measured by subjective and objective refraction. Retinoscopy was done with steak retinoscope without cycloplegics the working distance of 50 cm to estimate refractive status of the patientSlit lamp biomicroscopy and fundus examination were done to rule out any anterior or posterior segment ocular pathology. Intraocular pressure was measured with Goldman tonometer. Mean and standard deviation was calculated and chi square test was used to know the association between two variables. Statistical analysis of headache and control groups were done by calculating t-test to compare means of two groups, Statistical significance was set at p value < 0.05. Statistical software SPSS version 20.0 was used to analyse the data of the study.

III. Result

Among 402 School children with complaints of headache and 402 School children without headache 259(64.5%) were girls and 143(35.5%) were boys in headache group and 228(56.73%) were girls and 174(43.3%) were boys in non headachegroup respectively (Table 1).

Table 1: Ageand sex in headache (n=402) and control (n=402) group

Study group	Age years(mean± SD)	Male	Female
Headache	12.23± 2.21	143	259
Control	13.43± 1.96	174	228

Minimum age of a child was 8years and maximum age was 17 years in both the groups. Mean age of the participants was 12.23 ± 2.21 years in headache group and 13.43±1.96 years in group without headache.Most of the children in headache group and non headachegroup were aged between 13 to 15 years. Two study groups were age matched with two-tailed P value <0.05, considered very significant.All undergoes through retinoscope examination for the refractive errors and appropriate corrections were prescribed.

Among children with headache complaints, 30 (13.7%) had myopia, 58 (26.6%) had hypermetropia and 130(59.6.9%) had astigmatism. Out of 68 (16.9%) children with refractive errors in non headache group 47 (69.1%) had myopia, 12(17.6%) had hypermetropia and 9(13.2%) had astigmatism. The prevalence of refractive errors were higher in children with headache group than in non headache and difference was statistically significant (p<0.05) (Table-3).

Table 2: Comparison of the prevalence of refractive errors between headache and control groups

Refractive error	Headache group	Control group	P value
Astigmatism	130	9	<0.0001
Hypermetropia	58	12	<0.0001
Myopia	30	47	0.0073
Total	218	68	0.001

IV. Discussion

Our tertiary care hospital cover about 2.5 million of rural population. They are mostly low socioeconomicstatus having no health facility. They were referred from various primary health care centre from periphery to our hospital. They attend to our paediatric OPD with complaint of headache. In the present study the prevalence of refractive errors was higher in headache group 218(54.2%) compared to non headache group68(16.9%). The difference between two groups was significant, similar to observations in the previous studies. In both the groups, number of girls were more than the boys, and prevalence of headache more in girls. In this study, the prevalence of refractive errors was 54.2% in headache group compared to 16.9% in normal subjects. The difference between two groups was significant which corroborates with the observations of previous reports. The prevalence of refractive errors was higher in our study among the children with headache complaints comparing to the study of Cameron et al and Jain at al(15) and the study of Biswas J et al,(16) Ghosh S et al(9) in urban children of eastern India. The prevalence of refractive errorwas nearly similar to that of previous study Debebrata D et al(16). These discrepancies are due to the fact children in our study mostly resides in a geographical area marked as one of the backward districts of India and most of them were reluctant to receive medical care services for the health problem.

V. Conclusion

In this study there is statistically significant association between headache and refractive errors among children. It is indicate that refractive error might be cause for headache in children. Refractive error must be in mind as differential diagnosis in child with headache.This study enhances our understanding of the relationship of headache and refractive errors to improve opportunities for its treatment and prevention.

References

[1]. Olesen J. The International classification of headache disorders. 3rd ed. Headache Classification Subcommitte of the International Headache Society: Blabkweit Publishing. Cephalalgia 2013;33:762-64

[2]. Andrew D Hershey, Hope L. Obrien headache text book paediatrics Nelson 1st south Asia edition.

[3]. Abolbashari F, Hosseini SMA, AliYekta A, Khabazkhoob M. The correlation between refractive errors and headache in the young adults Austin J Clin Ophthalmol2014;1:1014.

[4]. Dandona R, Dandona L, Naduvilath TJ, Srinivas M, McCarly CA. Refractive errors in an urban population in southern India: the Andhra Pradesh Eye Disease Study. Invest Ophthalmol Vis Sci. 1999;40;2810-2818.

[5]. Waters WE. Headache and the eye A community study .Lancet 1970;2:1-4 7

[6]. Alawneh HF, Batainch HA. Prevalence of headache and migraine among school children in Jordan. Sudan J Public Health.2006;1:289-92. 10

[7]. Shivpuri D, Rajesh MS, Jain D. Prevalence and characteristics of migraine among adolescents: a questionnaire survey. Indian Pediatr2003;40:665-9

[8]. Padhye AS, Khandekar R, Dharmadhikari S, Dole K, Gogate P, Deshpande M. Prevalence of uncorrected refractive error and other eye problems among urban and rural school children. Middle East African Journal of Ophthalmology 2009;16:69-74.

[9]. Ghosh S, Mukhopadhyay U, Maji D, Bhaduri G. Visual impairment in urban school children of low-income families in Kolkata, India. Indian J Public Health 2012;56:163-7.

[10]. Gorayeb MA, Gorayeb R. Association between headache and anxiety disorders indicators in a school sample from RibeiraoPetro ,Brazil .ArqNeuropsiquiatr 2002;60:764-8.

[11]. Bellows JG. Headache and the eye. Headache 1968;7:165-170

[12]. Thomas E, Boardman HF, Ogden H, Mittson DS, Croft PR. Advice and care for headaches; who seeks it, who gives it? Cephalalgia 2004;24:740-52

[13]. Whittington TD. The art of clinical refraction. London: Oxford University Press;158..

[14]. Gordon DM. Some headaches in an ophthalmologist's office. Headache 1966;6;141-46

[15]. Jain AP, Chauhan B, Bhat AD. Sociodemographic and clinical profile of headache- a rural hospital based study. Indian Acad Clin Med 2007;8:26-28.

[16]. Biswas J, Saha I, Das D, Bandyopadhyay S, Ray B, Biswas G. Ocular morbidity among children at a tertiary eye care hospital in Kolkata, West Bengal ,Indian J Public Health 2012;56:293

[17]. Debabrata D , S. gupta et al A study on refractive errors in school children with complaints of headache in a rural tertiary care hospitalmedinapur medical college opthal dept. WB 2017.

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