

CLINICAL PROFILE OF CHILDREN WITH RECURRENT HEADACHE – A HOSPITAL BASED STUDY

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Abstract

Background

Headache is a multifactorial disorder involving not only genetic and medical causes but personal and psychological characteristics too. Primary headaches are most often recurrent, episodic headaches, and most children, are erratic in their presentation. Recurrent headaches occur commonly in children and are diagnosed on clinical grounds rather than any diagnostic testing. There is no indication of any diagnostic tests routinely when the clinical examination of a child is normal with no history of associated risk factors.

Aim of the study:

This study aims to find out the clinical profile of children with recurrent primary headache.

Methods:

This study was conducted at the pediatric outpatient department in Vinayaka Missions KirupanandaVariyar Medical College and Hospital, Salem for one year period. A pre-designed structured proforma was developed to collect the details of the patients. 85 children who walked

to pediatric OPD with complaints of recurrent primary headache were included in the study.

Results:

The proportion of patients with Tension-type headache (TTH) among those with recurrent headaches was 49%. The percentage of migraine (46%) was slightly less than tension-type headache, which is contrary to previous studies. This marks an interesting change in the past trends observed. We found Other Primary headaches (OPH) in 4 (5%) children.

Conclusion:

Though the study showed that migraine has presented itself in concurrence with the past studies; it was observed that there is a trend of increase in incidences of Tension-type headache (TTH) with the increase of age. This is an indication that headaches can be a warning sign of a stressful life, general illness, and social maladjustment of a child. The other fascinating result was that a considerable number of Other Primary Headache (OPH) cases have been reported; contrary to other studies that indicate OPH is rare. These results provide a new dimension of thought towards the diagnosis of headaches to improve the quality of life of the patient by providing treatment without delay.

Keywords: HEADACHE, MENINGITIS, TENSION TYPE HEADACHE, MIGRAINE

Introduction:

Headache is one of the common complaints in young children and adolescents. Headaches can be a primary problem or occur as an indication of an underlying disorder, representing a secondary problem.[1] Recognizing this difference is essential for choosing the appropriate course for the evaluation and treatment of the headache. In children, headaches are identified on clinical grounds rather than any other testing.[2] The regular use of any diagnostic studies is not indicated when the clinical history has no associated risk factors and the child's assessment is normal. [3] Primary headaches are frequently recurrent, episodic headaches, and most children, are sporadic in their presentation. [4] By 15 years of age, up to 75% of children have reported significant headaches. Though primary recurrent headaches are not very common still they occur frequently.[5] Migraine has been reported to occur in up to 11% of children between the ages of 5 and 15 years and up to 23% of older adolescents. [6] When these headaches become frequent, in up to 1% of children they may convert into a chronic daily headache, and this conversion is more prominent if the frequency of headaches is more than 15 days in a month.[7] This explains the necessity to treat the headaches aggressively or prevent the headaches altogether, trying to block transformation to chronic daily headaches and to provide quality of life to the budding generation.[8]

METHODS:

This study was conducted at the pediatric outpatient department in Vinayaka Missions KirupanandaVariyar Medical College and Hospital, Salem, from April 2018 to April 2019 A pre-designed structured proforma was developed to collect the details of the patient. 85 children who walked to pediatric OPD with complaints of recurrent primary headache were included in the study.

INCLUSION CRITERIA:

All children aged between 5 to 12 years attending the pediatric department with complaints of recurrent primary headache.

EXCLUSION CRITERIA:

Children presenting with a headache due to: Fever, Sinusitis, Infections, Trauma, Refractory errors, Features of papilledema, Referred pains from dental problems

STATISTICAL ANALYSIS:

Data entry was made in the Microsoft Excel software in codes and analysis was done with an SPSS-20 computer package. Categorical variables are expressed as percentages whereas continuous variables are expressed as mean \pm standard deviation. Association between the variable was found by the chi-square test and the relationship between the continuous variable was assessed by Student's t-test.

RESULTS**1)AGE DISTRIBUTION OF NO. OF PATIENTS**

Age	Count of Patients	Percentage (%)	Mean age	P value
5	3	3		
6	7	8		
7	7	8		
8	9	11		
9	8	9	10.6	0.01
10	21	25		
11	15	18		
12	15	18		
Grand Total	85			

Shows the age distribution of patients included in the study with recurrent primary headache, the mean age was found to be 10.6 years. The p-value was calculated using the chi-square test and was found to be 0.01. The percentage of female patients was more than male patients with female to male ratio of 1.2: 1. The percentage of female patients is increasing with age.

2)DISTRIBUTION OF TYPES OF HEADACHES

The result shows that the TTH has outnumbered migraine and OPH types of headaches

3) PATIENTS SPREAD BASED ON HEADACHE TYPE AND AGE

Age	Migraine	OPH	TTH
5	3	0	
6	6	0	1
7	6	0	1
8	5	0	4
9	2	0	6
10	6	2	13
11	5	2	8
12	6	0	9
Grand Total	39	4	42

Type of Headache	Count of Dx	Percentage (%)
Migraine	39	46
OPH	4	5
TTH	42	49
Total	85	

Migraine seems to be prevalent in all the age groups whereas TTH was found to be increasing with the age.

4) DIVISION OF PATIENTS BASED FAMILY HISTORY

Family History	Negative	Positive	Positive %
Migraine	7	32	82
TTH	33	9	21
OPH	2	2	50
Grand Total	25	60	

This shows that family history plays a bigger part in migraine when compared to TTH and OPH.

5) COUNT OF PATIENTS OF DIFFERENT MIGRAINE TYPES

Migraine type	Count of Dx	%
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Migraine- with aura	9	23
Migraine- without aura	26	67
Migraine- abdominal	1	2
Migraine- cyclical vomiting syndrome	3	8
Grand Total	39	

The percentage of patients suffering from migraine without aura is significantly higher than other migraine variants.

6)COUNT OF PATIENTS OF DIFFERENT MIGRAINE TYPES

Age	Migraine-with aura	Migraine-without aura	Migraine-abdominal	Migraine-cyclical vomiting syndrome	Grand Total	Mean age
5		3			3	8.8
6	2	4			6	
7		6			6	
8	2	2	1		5	
9	1	1			2	
10	1	5			6	
11	2	2		1	5	
12	1	3		2	6	
Grand Total	9	26	1	3	39	

The mean age of migraine patients was found to be 8.8 years. And the p-value calculated was 0.1

7)COUNT OF TENSION TYPE HEADACHE(TTH) PATIENTS BASED ON AGE

Age	TTH Instances	Percentage (%)	Mean age
5	0	0	10.3
6	1	2	
7	1	2	
8	4	10	

9	6	14
10	13	31
11	8	19
12	9	22
Grand Total	42	

The mean age of TTH patients was found to be 10.3 years. And the p-value calculated was <0.01. The percentage of female patients was found to be higher than male patients with a ratio of 1.5: 1

8)AGE DISTRIBUTION OF PATIENTS BASED ON TYPES OF OPH

Age	10	11	Grand Total
OPH-Cold stimulus headache	1	0	1
OPH-Primary Exercise headache	1	1	2
OPH- Primary Cough Headache	0	1	1
Grand Total	2	2	4

The study observed OPH only at age 10 and 11. Primary exercise headache was dominant.

9)COUNT OF HEADACHE TYPE BASED ON LOCATION OF HEADACHE

Location of Headache	Diffuse	Frontal	Occipital	Temporal
Migraine- abdominal	1			
Migraine- cyclical vomiting syndrome		1		2
Migraine- with aura		4		5
Migraine- without aura	4	5	1	16
OPH- Primary Cough Headache			1	

OPH-Cold stimulus headache		1		
OPH-Primary Exercise headache		1	1	
TTH	9	8	9	16
Grand Total	14	20	12	39

Temporal region of the cranium was predominantly (45%) affected site in both TTH and migraine followed by the frontal region (23%). Whereas OPH has both frontal and occipital involvement equally.

10) COUNT OF HEADACHE TYPE BASED ON CHARACTER OF HEADACHE

Character of headache	Band-like	Pulsating	Sharp	Throbbing	Undefined
Migraine- abdominal					1
Migraine- cyclical vomiting syndrome				1	2
Migraine- with aura		3	5	1	
Migraine- without aura	1	6	3	12	4
OPH- Primary Cough Headache					1
OPH-Cold stimulus headache			1		
OPH-Primary Exercise headache		1	1		
TTH	28	1	6	2	5
Grand Total	29	11	16	16	13

TTH type had a typical band-like headache in almost 69 % of patients whereas migraine showed throbbing type in 35 % and sharp character of headache was seen in 50% of OPH cases

11) COUNT OF HEADACHE TYPE BASED ON SEVERITY OF HEADACHE

Severity of Headache	Mild	Moderate	Severe
Migraine- abdominal	1		
Migraine- cyclical vomiting syndrome	2		1
Migraine- with aura	1	3	5
Migraine- without aura	16	7	3
OPH- Primary Cough Headache		1	
OPH-Cold stimulus headache	1		
OPH-Primary Exercise headache	2		
TTH	20	14	8
Grand Total	43	25	17

Though 50% of patients experienced mild form, a severe form of headache was seen in 20% of cases which is a noteworthy figure that is affecting the quality of life adversely.

DISCUSSION

Primary headaches are often recurrent, episodic and for most children, are erratic in their presentation. The frequency of recurrent headaches is common in children and the diagnosis should be made clinically rather than by any testing. [9] Headache prevalence varies from country to country and from region to region in the same country.[10] The sample size of our study is relatively higher compared to other studies that had a sample of 67 patients and Larsson Bet al studied 43 patients. The initial findings show that the mean age for onset of headache is at 10.6 years i.e., 3,7,7,9,8,21,15 and 15 cases of headache at ages 5,6,7,8,9,10,11 and 12 years respectively. [11] As per Laurel Kand other similar studies the mean age of onset of headache was 11.3 years. This indicates the need for effective primary care required even earlier. Based on gender distribution, our study population constituted 45% of males and 55% of females.[12] This indicated that Indian females suffer more from headaches. The proportion of patients with migraine among those with recurrent headaches (46%) was similar to a previous study in Delhi by Neat D et al, which showed migraine (51.7%) and (63.6%) [13] Proportion of TTH (49%) was slightly higher than migraine, which is on the contrary to the studies mentioned above. This marks an interesting change in the past trends observed. We found other Primary headache in 4 (5%) children. [14] Of the 85 cases, 39 were diagnosed with migraine, of which 26 cases (67%) were without aura, 9 cases (23%) were with aura, and 4 cases were episodic migraine variants, i.e., 3 cases (8%) were migraine of Cyclical vomiting syndrome and 1 case (2%) of abdominal migraine.[15] A similar study

by Pasquale Parise et al., could not elucidate episodic forms. This is probably due to the small sample size considered in their study. In the present study, 42 cases (49%) of the 85 cases presented with tension-type headache. An increasing trend of TTH with the advancement in age was observed being more common in females (60%) than in males. It was also observed that a steep increase occurred at the mean age of 10 years. [16] Increased level of anxiety mainly related to academic stress and social maladjustment was observed in the majority (88%) and eye strain headache due to excess usage of electronic gadgets was noticed in 5 cases (12%). These cases of eye strain headache should be further studied over some time to verify if they convert into a migraine or remain as TTH or get resolved with age.[17] The remaining 4 cases (5%) of the 85 cases in the current study were diagnosed with Other Primary Headaches. The distribution of OPH comprised 1 case of Cold stimulus headache (25%), 1 case of Primary cough headache (25%), and 2 cases of Exercise headache (50%). The evaluation of family history was done as part of the study. The results revealed that family history was more predominant in migraine patients (82%). [18] TTH incidences were much less dependent on family history (21%). Out of 85 cases, 45% of patients had temporal headache complaints that were diagnosed with TTH and migraine later. Followed by frontal region involvement in 23% of cases.[19] Whereas OPH has both frontal and occipital involvement equally. [20,21] The typical band-like headache was seen in almost 69 % of patients who suffered from TTH whereas migraine showed throbbing type in 35 % and sharp character of headache was seen in 50% of OPH cases. [22,] Mild form of headache was seen in 50% of patients, 30 % had moderated type of headache and 20% cases experienced a severe form of headache which is a noteworthy figure that is affecting the quality of life adversely.[23]

CONCLUSION

Although the study showed that migraine has presented itself in concurrence with the past studies; it was observed that there is a trend of increase in incidences of tension-type headache (TTH) with advancing of age, which is an indication that headache can be a warning sign of stress, general ill-being, and social mal-adjustment of a child. An increasing number of eye strain headaches is noteworthy. The other fascinating result was that a considerable number of OPH cases have been reported; contrary to other studies that indicate OPH is rare. The typical band-like headache with more temporal involvement was seen in the majority of cases of TTH. Throbbing type in temporal followed by the frontal region of the cranium was affected in migraine. Though 20% of cases experienced a severe form of a headache still to be considered as high risk due to the affected quality of life. These results provide a new dimension of thought towards the diagnosis of headaches to improve the quality of life of the patient by establishing treatment at the earliest.

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