

A clinical study on characteristics of chronic migraine

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Abstract

Background: Migraine is the headache which is the most common. This study interpretation of clinical observations on migraine in outpatients including the types and subtypes of migraines, duration and acute frequency of attacks, severity, disability, affects and complications on quality of life. **Materials and Methods:** This is a prospective cross-sectional analysis focused on outpatients, performed over 2 years in the ENT clinic, which included 240 patients aged 12 to 55. The data were gathered from clinical records of patients who attended outpatient clinics. **Results:** Total 240 patients participated in study with 58 males and 182 females. with a ratio of male to female is 1:3.1 with female predominance. Mean age \pm SD was 24 ± 7.32 years. The mean age at first attack was 17 years. About 50% of the patients reported a family history of migraine. The mean duration of attack was 30 hours. Nausea and vomiting, photophobia and other nonspecific symptoms were experienced by 25%, 17%, and 15% of the patients respectively. About 35% of the patients in this study experienced aura during the period of study, the most common being migraine with aura, but also aura without a headache and aura with migraine. Most patients (63%) had migraine without aura and 38% had migraine with aura. No statistically significant difference was seen in the character of headache and side of pain between female and male patients. Statistically significant difference was seen in the onset of headache and duration of headache between female and male patients. The most consistent autonomic feature observed was nausea, followed by phonophobia (87%) and photophobia (69%). The most common triggers were sleep deprivation /prolonged sleep (98%), stress (100%), hunger (93%), exercise (61%) and perfume/odour(19%) in all patients. **Conclusion:** This study adds to the comprehensive data regarding the occurrence, trends, trigger factors and related characteristics of chronic migraine, thereby consolidating the results of previous studies on the characteristics of chronic migraine headache.

Key Words: Chronic migraine, Headache, phonophobia.

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INTRODUCTION

Migraine is a common brain debilitating condition. Headache accounts for nearly 5 percent of all hospital

visits and approximately 20 percent of medical appointments in general practise with 4.4 percent of all appointments. At any point in their life, migraine affects more than 20% of people; epidemiological reports have found that 4.5% of Western Europe's population has headache on at least 15 days a month; global estimates indicate that about 1% of the world's population could have recurrent migraine. Chronic migraine puts a huge economic burden on society.^{1,2} Migraine is a chronic neurovascular condition with primary and peripheral manifestations. Although the precise mechanism by which migraine is initiated is not clear, brain damage affecting peripheral and central components of the trigeminovascular system is assumed to be implicated in the process leading to the release of inflammatory

mediators and subsequent propagation and perpetuation of headache, including migraines. Attacks with migraines are characterised as mild to extreme headache combined with hypersensitivity to environmental stimuli such as light and sound and nausea. Where left untreated, these headaches usually last from 4 to 72 hours, are generally unilateral in nature, and may involve throbbing or pulsating pain. The migraine aura is comprised of neurological symptoms, including vision disturbance, nausea, numbness, tingling, fatigue, or discomfort. The aura is caused by cortical spreading depression, a wave of irregular electrical discharges flowing through the surface of the brain and short-circuiting the brain¹⁴. Besides that, migraine is better conceptualised as a triad of paroxysmal pain, nausea and/or vomiting, and an aura of neurological focus events (visual events).³ Patients with these three symptoms have migraine with aura (or "classical migraine"), whereas those with paroxysmal headache (with or without vomiting) but without aura are known as migraine without aura (or "normal migraine").^{4,5} The aim of this study was to clinically investigate migraines, leading to infer causality behind the disease, risk factors and causes. Data gathered from this study will facilitate migraine diagnosis and its risk of occurring in individuals that have similarities to patients found in this study. We assume that early identification of these signs is associated with saving time and resources on needless testing and drugs used in management and treatment.

MATERIALS AND METHODS

Outpatient-based prospective cross-sectional study, conducted for a period of 2 years in the ENT department. The total number of patients included in this study was 240 and included all those attending outpatient clinics. The cases were 12–55 years old and both sexes suffered from migraine headaches according to the International Classification of Headache Disorders (version ICHD-III b).^{6,7}

Inclusion criteria: patients with 1–8 attacks over four weeks, attacks fulfilling the International classification of Headache Disorders migraine diagnostic criteria, and absence of secondary causes of headaches.

Exclusion criteria: migraine onset at age >50, headaches attributable to underlying organic disorders, or no migraine attacks during the four weeks of assessment.

All data were collected from participant records. For all patients a full medical history and family history of migraine headaches was obtained, and a thorough clinical examination performed, including general examination, assessment of vital signs, Glasgow Coma Scale (GCS), neurological and physical examinations. Chronic migraine has distinct clinical characteristics, yet it is one of the most under diagnosed and inadequately treated headache condition. There are very few clinical descriptive studies on chronic migraine that deal with its characteristic clinical features and treatment options. Ours is a prospective descriptive study dealing with the clinical and demographic characteristics in chronic migraine patients attending our outpatient department. The aim of this study is to highlight the prevalence of chronic migraine and chronic migraine related disability in the community and contribute new resource data towards its clinical characteristic to facilitate awareness, disease recognition and help develop effective treatment strategies.

The following headache characteristics were obtained:

- a. Side of headache: 1 = strictly left side; 2 = strictly right side; 3 = either side; 4 = both sides and/or generalized
- b. Headache character: throbbing, aching, pressure, stabbing and others
- c. Headache intensity: Intensity was rated on a visual analog scale of 0 to 10 in the absence of treatment.
- d. Usual time of occurrence of headache: morning, afternoon, evening, during night or "any time"
- e. Headache waking from sleep or present on waking: rated on scaled grade 0 to 3; 0 = never; 1 = occasionally; 2 = frequently; 3 = very frequently
- f. Headache duration (hours) g. Headache aggravated by activity
- g. Associated factors: 0 = never; 1 = nausea and/orvomiting; 2 = photophobia; 3 = phonophobia; 4 = others
- h. Headache triggers (stress, menstruation, hunger, sleep disturbance, hormone drugs, lights, weather, exercise, food, alcohol, diet, heat, perfume, odor, or others)

We implemented standard descriptive statistics and data analysis using IBM SPSS Statistics Software (version 20.0, SPSS). All p-values < 0.05 were considered statistically significant for on-sample t-test. Mean and standard deviation were used to present data.

RESULTS

Total 240 patients participated in study with 58 males and 182 females. with a ratio of male to female is 1:3.1 with female predominance.

Table 1: Demographic details in present study

Parameters	Females	Males	Total
Age in years mean±SD	23±6.74	26±8.32	24±7.32
Age of onset in years	16	18	17
Family history of migraine(%)	60%	40%	50%
Frequency days per month	2	2	2
Duration of attack, hours	36	24	30
Nausea and vomiting(%)	20%	30%	25%
Photophobia(%)	15%	20%	17%
Other nonspecific symptoms(%)	10%	20%	15%
Aura (%)	50%	20%	35%

A total of 240 patients with a migraine headache were included, including 182 women (75.8%) and 58 men (24.2%); women/men ratio of 3.1:1. Mean age ±SD was 24 ± 7.32 years. The mean age at first attack was 17 years. About 50% of the patients reported a family history of migraine. The mean duration of attack was 30 hours. Nausea and vomiting, photophobia and other nonspecific symptoms were experienced by 25%, 17%, and 15% of the patients respectively. About 35% of the patients in this study experienced aura during the period of study, the most common being migraine with aura, but also aura without a headache and aura with migraine.

Table 2: Characteristics of chronic migraine

Variables	Females	males	Total	P-values
Diagnosis				
Migraine with aura	138(76%)	12(20%)	150(63%)	<0.05
Migraine without aura	44(24%)	47(80%)	91(38%)	
Headache character				
Throbbing	40(22%)	7(12%)	47(19.6%)	>0.05
Aching	29(16%)	10(17%)	39(16.3%)	
Pressure	91(50%)	32(55%)	122(51%)	
Stabbing	21(12%)	10(16%)	32(13%)	
Side of pain				
Right	47(26%)	9(16%)	56(23%)	>0.05
Left	38(21%)	13(23%)	51(21%)	
Both sides	97(53%)	35(61%)	133(56%)	
Headache onset				
Morning	22(12%)	12(20%)	34(14%)	<0.05
Afternoon	58(32%)	12(21%)	70(29%)	
Evening	30(17%)	9(16%)	40(17%)	
Night	20(11%)	16(27%)	36(15%)	
Anytime	51(28%)	9(16%)	60(25%)	
Headache duration				
			0	
5-10 hours	126(69%)	30(51%)	156(65%)	<0.05
10-15 hours	42(23%)	22(38%)	63(26%)	
>15 hours	14(8%)	6(11%)	21(9%)	

Most patients (63%) had migraine without aura and 38% had migraine with aura. No statistically significant difference was seen in the character of headache and side of pain between female and male patients. Statistically significant difference was seen in the onset of headache and duration of headache between female and male patients .

Table 3: Associated features and triggers of migraine patients

Associated features	Females	Males	Total	P-values
Nausea / vomiting	167(92%)	52(89%)	219(91%)	<0.05
Photophobia	124(68%)	43(74%)	166(69%)	<0.05
Phonophobia	169(93%)	40(69%)	209(87%)	<0.05
Others	40(22%)	25(43%)	65(27%)	<0.05
Headache triggers				

Stress	182(100%)	58(100%)	240(100%)	>0.05
Hunger	180(99%)	42(71%)	222(93%)	<0.05
Exercise	98(54%)	48(83%)	146(61%)	<0.05
Sleep disturbance	182(100%)	54(93%)	236(98%)	<0.05
Odour	38(21)	7(11%)	45(19%)	<0.05
Mensuration	41(23%)		23(42%)	<0.05

The most consistent autonomic feature observed was nausea, followed by phonophobia (87%) and photophobia (69%). The most common triggers were sleep deprivation /prolonged sleep (98%), stress (100%), hunger (93%), exercise (61%) and perfume/odour(19%) in all patients, Mensuration is triggering in 23% of cases Except for stress no significant difference was found between female and male patients.

DISCUSSION

In this study, 240 patients diagnosed with migraine headaches, according to established criteria were analyzed. 182 women (75.8%) and 58 men (24.2%); women/men ratio of 3.1:1 which is consistent with the results of largescale studies^{6,10,12}. This skewed sex ratio is mostly due to hormonal variation during menstruation and pregnancy, and to genetic predisposition¹. (table-1) In present study Mean age \pm SD was 24 ± 7.32 years. The mean age at first attack was 17 years. About 50% of the patients reported a family history of migraine. The mean duration of attack was 30 hours. Nausea and vomiting, photophobia and other nonspecific symptoms were experienced by 25%, 17%, and 15% of the patients respectively. About 35% of the patients in this study experienced aura during the period of study, the most common being migraine with aura, but also aura without a headache and aura with migraine.(table-2) Most patients (63%) had migraine without aura and 38% had migraine with aura. No statistically significant difference was seen in the character of headache and side of pain between female and male patients. Statistically significant difference was seen in the onset of headache and duration of headache between female and male patients. in study done by Rahman Abdul Aman *et al.*⁸ showed Most female patients in the study had an aura-free migraine (79.13%), while male patients had an aura-free migraine (59.75%) and aura migraine (40.24%), respectively. The disparity between male and female patients was important. Chronic regular headache was more common in women and less educated women, and was more likely in married and obese women. In our analysis and throbbing in nature, headache was mainly unilateral (either sidewise). In 70% of female patients, throbbing headache was seen relative to male patients. In the current study, there was statistically significant difference between headache with or without aura, genders, onset of headache, duration of headache and few of the associated and trigger factors. The pain intensity was reported to be moderate by most of our patients. Our study did not observe any gender difference as reported in other studies.⁹ In this study, the onset of headache was most commonly reported to be in the “afternoon” (29%)

followed by “anytime” (25%). Khalid Obiad Mohsin Almohammadawi *et al.*¹⁰ showed the mean frequency of acute migraine attacks was 2 ± 4.63 days per month; in very few patients (0.5%) the frequency of the attacks was 14–16 days per month, especially in patients suffering from migraine with aura and chronic migraine. One third of patients had a family history of migraine, showing that migraine is an inherited condition accompanied by episodic symptoms arising in the brain.^{11,12,13} The most consistent autonomic feature observed was nausea, followed by phonophobia (87%) and photophobia (69%). The most common triggers were sleep deprivation /prolonged sleep (98%), stress (100%), hunger (93%), exercise (61%) and perfume/odour(19%) in all patients, Mensuration is triggering in 23% of cases. There is data supporting observations of a substantial sleep/migraine relationship and implication of sleep disturbance in specific headache patterns and severity. The shorter the sleep the headache patterns become more intense. Sleep symptoms occurred more frequently in chronic persons than episodic migraineurs.^{14,15} The main causative factors in this study were stress, hunger and sleep disruption. A less common precipitating factor was heavy odour. There was no substantial difference, as regards stress, between precipitating factors and gender.

CONCLUSION

We found, in our study, that migraine causes headache which results in acute episodes of functional impairment and women had more suffered than men (3.1:1 ratio). At first attack the mean age was a young age, and distribution was highly altered by a family history of migraines. Migraine without an aura was the most common type, and patients who were able to diagnose migraines reported symptoms including nausea and vomiting, and phonophobia. Our analysis will lead to the occurrence, trends, trigger factors and observational data related recurrent migraine symptoms.

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