

Pattern of migraine headache in a group of Kurdish Iraqi patients

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ABSTRACT

الأهداف: دراسة أنماط الصداع النصفي، وبيان تأثير العمر وفترة المرض على نشوء الأعراض.

الطريقة: تمت مراجعة التاريخ المرضي لـ 200 حالة صداع نصفي، قاموا بمراجعة عيادة الأمراض العصبية - مستشفى زركاري التعليمي وعيادة كردستان الخاصة للأمراض العصبية - العراق، خلال الفترة مابين أكتوبر 2007م وحتى مايو 2008م. تم تعريف حالة الصداع النصفي حسب معايير جمعية الصداع العالمية (IHS).

النتائج: غالبية (77%) المرضى كانوا من الأناث. متوسط العمر (+ الانحراف المعياري) عند التشخيص كان 22.33 ± 9.52 عام. بينت النتائج أن الصداع النصفي غير المسبوق بانذار (اوردة) هو النوع الأكثر شيوعاً (72%). تمت دراسة حصول الأعراض (رهاب الصوت 92%، الغثيان 86.5%، رهاب الضوء 84%، دوام 78%، آلام الفروة 75%، شحوب الوجه 64%، تعرق 57%، قيء 50%، ألم الأطراف 39%، ألم الصدر 6%) وعلاقتها مع العمر عند اجراء الفحص ومدة المرض بالسنين. لم يلاحظ وجود علاقة ذات اعتماد احصائي بين مدة المرض بالسنين والعمر عند التشخيص على نشوء أعراض الصداع النصفي، كذلك لم يلاحظ وجود علاقة بين مدة المرض وتكرار النوبات.

خاتمة: العديد من أعراض الصداع النصفي بقيت على حالها في كل نوبة بغض النظر عن مدة المرض والعمر عند التشخيص، عدا أن نوبات القيء كانت أقل حصولاً في المرضى الأقل عمراً.

Objectives: To study the pattern of migraine, and to show the effect of age and duration of illness on the evolution of migraine symptoms.

Methods: A review of 200 migraine cases (attending the outpatient neurology clinic at Rezgary Teaching Hospital, and Kurdistan Private Neurology Clinic) was carried out during the period between October 2007 to May 2008. Case definition of migraine was according to the International Headache Society (IHS) criteria.

Results: The majority (77%) of the studied sample was female. The mean age (\pm SD) at onset was 22.33 ± 9.52 years. The most common type of migraine observed was migraine without aura (72%). Different symptoms like phonophobia (92%), nausea (86.5%), photophobia (84%), vertigo (78%), scalp tenderness (75%), attacks of facial pallor (64%), sweating (57%), vomiting (50%), pain in the arms (39%), and pain in the chest (6%) was studied in relation to age at presentation and duration of illness in years. No significant association was found between the duration of illness and age at presentation and evolution of migraine symptoms. No significant association was found between the duration of illness and frequency of the attacks.

Conclusion: Many migraine symptoms remain the same in each attack no matter the duration of illness and age at presentation, except for bouts of vomiting, which may be less common in younger patients.

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Headache is the most common symptom in medicine, and one of the most common chief complaints among patients visiting primary care physicians, neurologists, psychiatrists, and neurosurgeons in our region. Diagnosis begins with exclusion of secondary causes for headache. More than 90% of patients will have a primary-type headache, so diagnosis can often be completed without further testing.¹ Migraine is the most common type of chronic headache varieties, it affects around 30 million people in the United States.¹ Migraine in one theory is a chronic, often inherited

condition, involving brain hypersensitivity, and a lowered threshold for trigeminal-vascular activation. Intermittent debilitating attacks are characterized by autonomic, gastrointestinal, and neurological symptoms. Migraine significantly affects patients' quality of life leading to marked reduction in patients' mental, physical, and daily general activities. However, there is great migraine under-diagnosis and management.¹ The criteria for the diagnosis of migraine include throbbing, unilateral headache, headache worsening with activity, nausea, vomiting, photophobia, and phonophobia.² Focal neurological symptoms and signs may be manifested in around one third of migraine patients, especially those patients with 'migraine with aura' and complicated migraine types like 'vertebrobasilar migraine' and 'hemiplegic migraine'.³ Numerous articles and scientific research proved that migraine is most likely a complex interaction between personal genetic susceptibilities and variable environmental triggers.^{4,5} The brain of the migraineur is particularly sensitive to environmental and sensory stimuli; migraine-prone patients do not habituate easily to sensory stimuli. This sensitivity is amplified in females during the menstrual cycle.⁴ The aim of this study is to register different migraine symptoms and associated features, and to find out whether there is any association between the evolution of these symptoms and the duration of illness and age at presentation, in addition to studying the effect of duration of illness on frequency of attacks.

Methods. A total of 200 migraine patients were collected from the outpatient neurology clinic at Rezgary Teaching Hospital and Kurdistan Neurology Private Clinic in Erbil, Iraq between October 2007 and May 2008. A convenient method of sampling was used to collect the sample. The case definition of migraine was according to the criteria of the International Headache Society (IHS).⁶ Inclusion criteria were patients who fulfilled the above mentioned definition of migraine, aged 12-years-old and above. An interview was carried out by the researchers using a questionnaire (designed by them) that included general information on the patient, and enquiry regarding specific symptoms of migraine. Patients were included in this study only if they gave free verbal informed consent. The research committee at the College of Medicine/Hawler Medical University approved the study protocol. Patients were excluded from the study if they had: (a) Features of tension headache or any other type of chronic headache. (b) Chronic post-traumatic headache. (c) Headache caused by chronic medical illness like hypertension. (d) Recent onset headaches, namely, less than one month prior to study. Patient's personal information, like, name, age, and gender were obtained. Each patient was

assessed clinically for his headache character, duration, frequency, and associated symptoms. Patients were stratified by migraine type, age, and duration of illness. Data were entered into a computer using the Microsoft Excel (2003) computer program. Chi square test of association was used when appropriate. A *p*-value of ≤ 0.05 was considered statistically significant.

Results. The study sample composed of 200 patients (153 females and 47 males). The male:female ratio was 0.3:1. Around one third (30%) were aged 20-29 years, and another third (33%) were aged 30-39 years. Those aged 40-49 years constituted 17%, and those aged 10-19 years constituted 11.5% of the studied sample. Only 8.5% were aged 50 years and more. The age of onset of two-thirds (67.5%) of patients ranged from 10-29 years old. Migraine was diagnosed during the thirties in 20% of patients. Table 1 shows that migraine type in the majority of patients was migraine without aura, while only 20% of patients presented with migraine with aura (formerly called classic migraine). Some patients showed mixed types of presentations including some of the attacks without aura and other attacks of retinal migraine or vertebrobasilar migraine (complications of migraine). Generally speaking, the trend of migraine types is nearly the same among males and females (Table 1). It is evident from Table 2 that migraine without aura is the most common variety in all age groups, and its proportion is highest in the age group 10-19 years, while it is least in the age group 40-49 years. No clear association between duration of illness and development of symptoms have been found (even when the Chi square test was applied, the differences in proportions were not statistically significant). The most common symptoms that were associated with migraine were phonophobia, nausea, photophobia, vertigo, and scalp tenderness in

Table 1 - Distribution of sample by type of migraine and gender.

Type of migraine	Male	Female	Total
	n (%)		
Migraine without aura	36 (76.6)	108 (70.6)	144 (72)
Migraine with aura	6 (12.8)	34 (22.2)	40 (20)
Ophthalmoplegic migraine	1 (2.1)	1 (0.65)	2 (1)
Retinal migraine	2 (4.3)	2 (1.3)	4 (2)
Complications of migraine	2 (4.3)	7 (4.6)	9 (4.5)
Migrainous disorders not fulfilling above criteria	0 (0.0)	1 (0.65)	1 (0.5)
Total	47 (100)	153 (100)	200 (100)

An expected cell count is less than 5; Chi-square is not valid

Table 2 - Distribution of sample by type of migraine and age.

Type of migraine	10-19	20-29	30-39	40-49	50-59	60-60		
	n (%)							
Migraine without aura	19 (82.6)	44 (73.3)	51 (77.3)	20 (58.8)	10 (62.5)	0 (0)		
Migraine with aura	3 (13.4)	10 (16.7)	11 (16.7)	11 (32.35)	4 (25)	1 (100)		
Ophthalmoplegic migraine	0 (0.0)	0 (0.0)	0 (0.0)	1 (2.9)	1 (6.25)	0 (0)		
Retinal migraine	1 (4.35)	2 (3.3)	0 (0.0)	0 (0.0)	1 (6.25)	0 (0)		
Complications of migraine	0 (0.0)	4 (6.7)	3 (4.55)	2 (5.9)	0 (0.0)	0 (0)		
Migrainous disorders not fulfilling above criteria	0 (0.0)	0 (0.0)	1 (1.5)	0 (0.0)	0 (0.0)	0 (0)		
Total	23 (100)	60 (100)	66 (100)	34 (100)	16 (100)	1 (100)		

Table 3 - Distribution of sample by duration of headache and associated symptoms.

Symptoms	Duration of headache in years, n (%)						Overall % n=200	P-value
	<3	3-5.9	6-8.9	9-11.9	12-14.9	≥15		
	n=95	n=25	n=17	n=23	n=8	n=32		
Photophobia	85 (89)	18 (72)	16 (94)	20 (87)	7 (86)	26 (81)	84	NA
Nausea	79 (83)	21 (84)	16 (94)	21 (91)	7 (86)	30 (94)	86.5	NA
Scalp tenderness	69 (73)	19 (76)	13 (76)	18 (78)	7 (86)	20 (63)	75	0.67
Vomiting	42 (44)	10 (40)	6 (35)	14 (61)	6 (75)	14 (44)	50	0.3
Phonophobia	86 (91)	22 (88)	16 (94)	21 (91)	8 (100)	28 (86)	92	NA
Pallor	61 (64)	11 (44)	12 (71)	17 (74)	6 (75)	18 (56)	64	0.253
Sweating	55 (58)	15 (60)	8 (47)	15 (65)	5 (63)	15 (47)	57	0.722
Vertigo	61 (64)	14 (56)	14 (82)	15 (65)	7 (86)	17 (53)	78	0.24
Pain in the chest	4 (4.2)	3 (12)	3 (17)	1 (4.3)	0 (0)	0 (0)	6	NA
Pain in limbs	39 (41)	15 (60)	4 (23.5)	11 (48)	2 (25)	12 (39)	39	0.2

Chi-square test is not applicable

75% of cases as shown in Table 3. In general, there is no specific symptom that is associated with a certain age group. It is evident from Table 4 that the proportion of patients who develop symptoms is less in the age group 10-19 years than the overall prevalence. The only exception is pallor, where it is more in the younger age group than the overall percentage. No significant association ($p=0.66$) between the duration of migraine and the frequency of the attacks was also found. The majority of the sample experienced 6 or more attacks per month (Table 5).

Discussion. In this study, we tried to analyze the effect of illness duration and patient's age on the evolution of migraine symptoms and associated

features, and frequency of the attacks. In our study, the age at onset was 10-40 years, and this may reflect younger age of onset than that mentioned by others like Lipton et al.⁷ There were more female than male patients and this is consistent with most of the studies and literature as migraine usually affects female patients more, this is mostly related to hormonal changes, and the prominence of emotional influences toward pain, which would be expected to be more in females. Types of migraine in our studied group were also recorded, the most common type of migraine observed in our sample was migraine without aura (72%), while migraine with aura was observed in 20% of patients with slightly higher female prevalence and later age of presentation (30-40 years) than in migraine without aura, this was

Table 4 - Distribution of sample by age and associated symptoms.

Symptoms	Age group in years, n (%)					
	10-19 n=23	20-29 n=60	30-39 n=66	40-49 n=34	50-59 n=16	60-69 n=1
Photophobia	17 (74)	53 (88)	56 (84)	32 (94)	12 (75)	1 (100)
Nausea	18 (78)	50 (83)	58 (87)	31 (91)	16 (100)	1 (100)
Scalp tenderness	13 (56)	38 (63)	54 (81)	27 (79)	13 (81)	1 (100)
Vomiting	6 (23)	25 (41)	38 (58)	18 (52)	6 (38)	0 (0)
Phonophobia	17 (74)	56 (93)	59 (89)	34 (100)	14 (88)	1 (100)
Pallor	17 (74)	39 (65)	39 (60)	18 (34)	11 (69)	0 (0)
Sweating	10 (43)	37 (62)	34 (52)	20 (59)	11 (69)	1 (100)
Vertigo	13 (57)	36 (60)	40 (61)	22 (65)	10 (66)	1 (100)
Pain in the chest	1 (4)	4 (7)	6 (9)	3 (9)	1 (6)	1 (100)
Pain in limbs	5 (21)	25 (42)	32 (49)	15 (44)	7 (44)	0 (0)

Chi-square test is not valid

Table 5 - Distribution of sample by duration of disease and frequency of attacks.

Duration (years)	Frequency of attacks, n (%)		Total
	≤5 attacks/month	≥6 attacks/month	
< 3	12 (12.6)	83 (87.4)	144 (100)
3-5.9	3 (12.0)	22 (88.0)	40 (100)
6-8.9	3 (17.65)	14 (82.35)	2 (100)
9-11.9	4 (17.4)	19 (82.6)	4 (100)
12-14.9	1 (12.5)	7 (87.5)	9 (100)
≥ 15	8 (25.0)	24 (75.0)	1 (100)
Total	31 (15.5)	169 (84.5)	200 (100)

$X^2=3.21, p=0.667$

different from descriptions of other researchers regarding age and gender prevalence of migraine without aura, which showed later age at onset.⁸⁻¹⁰ Ophthalmoplegic migraine, which was recently described as a neuropathic process involving oculomotor nerves is present in 1% only; 4.5% manifest complicated migraine attacks in the form of vertebrobasilar insufficiency features like vertigo, loss of consciousness, visual manifestations, and diplopia, while retinal migraine was described by 2% of patients similar to other observations.⁴

We investigated different migraine features and manifestations like, photophobia, phonophobia, nausea, vomiting, attacks of facial pallor, sweating, vertigo, scalp tenderness, pain in the arms, and pain in the chest, and the presence of these associated symptoms in Iraqi patients were nearly the same as observed by others, except for vertigo, which was higher in our studied group; this may be attributed to some patients

not expressing their symptoms carefully, and confusion between vertigo and lightheadedness, which is also common among migraine patients.

Regarding the effect of duration of illness on different migraine associated symptoms, this study did not prove major differences in the percentage of symptoms with the chronicity of the disease, however, some of the patients mentioned that some symptoms like nausea and vomiting disappeared with time to be replaced by more headache frequency and changing of the character of headache to a chronic daily headache. This was also described in other observations,¹¹⁻¹³ or that the character of the headache changed in some patients to chronic daily headache with some tension headache symptoms like continuous neck muscle spasms. These descriptions are contradictory to Marcelo et al's findings.¹⁴

The effect of age at presentation was also recorded in our group of patients, showing that different age groups manifest nearly the same percentages of associated symptoms and features of migraine, except for vomiting and pain in the limbs, which was less among the younger age groups, and facial pallor during the attacks was less common among the older age groups (40-49 years). The prevalence of photophobia, phonophobia, vomiting, and more acute attacks usually decline with age according to other studies,¹⁵ but this was not evident statically in our studied group, partly because most of our patients were mismanaged for a long time and no proper prophylactic treatment had been used.

The frequency and number of attacks per month was nearly the same in all durations of illness studied in this sample, except for those patients having duration more

than 15 years, in which the frequency of the attacks got somewhat less. Marcelo et al¹⁴ found that the profile of migraine changes over the life span and suggests 3 nonexclusive profiles. In many patients migraine remits. In some patients the attacks get less typical, being incomplete instead of full migraine attack, and in some patients the frequency of attacks increases to change later to a chronic daily headache. While Dahlof⁶ found in a recent Swedish survey that 80% of migraine patients reported a change in attack frequency, with 80% of them having fewer migraines, and 20% having more with increase in duration of illness, and 55% reported a change in duration of attack, with 66% of them saying their attacks lasted for shorter periods of time, and 34% saying they lasted longer, 66% said the pain intensity changed, with 83% of them experiencing milder pain and 17% experiencing more severe pain and only 1.6%, or 6 participants, progressed to chronic migraine, defined as having migraines more than 15 days a month. These results may reflect better migraine diagnosis and treatment in Sweden as compared to our results, which reflect more transformation of migraine to chronic daily headache and increase in the frequency of the attacks, which are partially due to less the lower number of neurologists in this region with reduction in migraine care and diagnosis. Such clinical analysis of patients symptoms and associated features depends greatly on the patient's own words of describing his symptoms with some leading questions designed by the authors; this may not reflect the true evolution of symptoms all the time since patients may not be able to recall all their symptoms during the interview, which may take around 30 minutes, and since we are living in a cosmopolitan community that contains different types of Kurdish populations and sometimes Turkish Kurdish, or Iranian Kurdish patients, this may put the language as a clear barrier affecting data collection.

In conclusion, migraine headache usually started at earlier ages in our locality, the frequency of headache attacks increased in frequency with time to change later into atypical migraine or chronic daily headache. This is partly due to mismanagement of migraine in our region and misunderstanding of prophylactic treatment of migraine, and complete unawareness of nonpharmacological management in addition to lack of original brands of prophylactic medications, and finally the fact that up to 50% of migraineurs go undiagnosed.¹⁷ We found also that symptoms and associated features of migraine most of the time remain the same in each attack no matter the duration of illness and patients' age at presentation, but younger patients having less attacks of vomiting, may be due to the fact that this symptom

would be manifested with the chronic evolution of the disease as the severity of headache attacks may increase. People, including migraine patients, have personal variations regarding their emotional response to pain; this issue makes studying different symptomatic presentations difficult and requires the designation of a special scaling system that shows different responses among individual patients.

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