Prevalence of adult migraine in general practice

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In 1988 the International Headache Society presented new criteria for the diagnosis of migraine. We used these criteria in a questionnaire to assist in the diagnosis of migraine. The questionnaire was answered by 230 patients in four general practices. We found a migraine prevalence of 11.7%. More than 70% of migraine patients had 12 or more attacks per year, and the length of attack varied between 4 and 24 h in 80% of them. The majority of migraineurs went to bed during the attack and 55% had stayed away from work due to migraine during the last year. The results of this study are in agreement with others. Migraine is an appreciable economic concern due to frequent short absenteeism from work. □ *General practice, migraine, prevalence*

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Migraine headache has been estimated to affect between 1 and 19% of adult men and between 3 and 29% of adult women in various epidemiological studies (see review (1)). A survey of general practice patients in the USA showed that 8% had migraine (1), while a British survey of migraine prevalence in industry showed that 6% of employees suffered from migraine (2). This variation in prevalence probably reflects differences in diagnostic criteria rather than a true variation in prevalence.

One of the problems with migraine diagnosis has been the use of the terms "can be present", "often present" and "occurs sometimes". In May 1988 the International Headache Society (IHS) published its new classification for all types of headache (3). This laid out which specific symptoms and/or clinical findings were obligatory for the diagnosis of the different types of headache, thus facilitating a more exact diagnosis of headache and introducing uniformity in headache research. This study was planned to examine the use of a short headache questionnaire to distinguish between IHS migraine and other headaches when used in a general practice patient population. In addition, we registered absenteeism from work due to migraine.

Materials and methods

Using the IHS diagnostic criteria we constructed a questionnaire to distinguish migraine from other types of headache (Table 1). The questionnaire included questions on attack frequency, absenteeism, medical consultation, treatment and family history. The information about absenteeism was recorded as 1 day, 2–3 days, 4–5 days or more than one week absent during the last year.

Four general practitioners in the Fredrikstad area of Norway (population approximately 70,000) gave questionnaires to a total of 230 consecutive patients during the same week of December 1989. These included 174 women and 56 men with an age span of 18–72 years. We were surprised by the overrepresentation of women in the study. This, however, can be explained by the fact that women represent approximately 65% of GP consultations. In addition, the female GP in this study, the only full-time female general practitioner in the town of Fredrikstad, has nearly 80% female patients. Patients had booked appointments for a variety of reasons including contraception, health certification, ante-natal examination, blood pressure control, urinary tract infection, muscle pains and headache. For practical reasons it was decided not to include emergency consultations. No acute cases of headache were questioned. Most of the patients answered the questionnaire while waiting to see the doctor and the general practitioner then answering any queries. One of the doctors went through the whole questionnaire with the patients. The questionnaire was easy to use, not one questionnaire being discarded because of inadequate answers, and the time taken for the doctor to check the form was just a few minutes.

The form was submitted anonymously, only the doctor knowing the patient's identity. The answers were evaluated according to the IHS migraine criteria. Only patients fulfilling all the necessary IHS criteria for migraine with or without aura (1.1 and 1.2) and having no disease that could explain the headache were classified as having migraine. Patients meeting the classification "migraine disorder not fulfilling the above criteria" (1.7) were excluded. The clinical diagnosis of migraine was made by the GP while the questionnaire diagnosis was made wholly on the answers given on "must satisfy the criteria" method.

Results

Eighty percent of the patients questioned had suffered from headache at some time during their life. There was a lifetime prevalence of migraine of 13.9% (32 of 230 patients) and a previous one-year preva-

Table 1. Migraine-related questions on questionnaire.

		M	F		16–30	30–50	50–65	>65
	Sex	☐	☐	Age	☐	☐	☐	☐
1.	Have you ever before had a headache? If yes, please carry on to question 2.							
2.	For how many years have you suffered from headaches? ..... years							
3.	Is your headache present continuously or does it appear in attacks?							
					Continuously ☐	Attacks ☐		
4.	For how long does an average headache attack last if you don't treat it?							
					Less than 1 hour			☐
					1–3 hours			☐
					4–12 hours			☐
					1 day			☐
					Up to 3 days			☐
5.	Approximately how many headache attacks have you had?							
						All your life	Last year	
					Less than 5	☐	☐	
					5–12	☐	☐	
					More than 12	☐	☐	
6.	*Do you get any warning before the headache appears?*						YES ☐	NO ☐
	If YES, which ones?							
					Visual disturbances like for example spots, lines, flashing light in front of your eyes		☐	☐
					Burning, pricking sensations anywhere in your body		☐	☐
					Numbness in half your body or face		☐	☐
					Feeling of weakness		☐	☐
					Problems talking		☐	☐
					Other			
					Specify: _____			
	How long do these warnings last?							
					Up to 15 minutes			☐
					Up to 30 minutes			☐
					Up to 1 hour			☐
					More than 1 hour			☐
7.	How often do you have a headache?							
					Every day			☐
					Once per week			☐
					Once per month			☐
					More seldom			☐
					Only before or during menstruation			☐
8.	Is your headache						YES	NO
					Pulsating		☐	☐
					One sided		☐	☐
					Does it inhibit your everyday activities		☐	☐
					Does it get worse by walking stairs or similar routine physical activities		☐	☐
9.	During headache, do you also suffer from						YES	NO
					Nausea and/or vomiting		☐	☐
					Increased sensitivity to light and sound		☐	☐
10.	To what extent is your daily life affected when you have a headache?							
					I have to go to bed			☐
					I have to take it easy, but I don't require bed rest			☐
					Only slightly affected			☐
					Not at all			☐

lence of 5.4% in men, 13.8% in women, 11.7% (27 patients) in the study population as a whole. Eighty-one and a half percent of the patients with migraine were between 18 and 50 years old, 16% between 51 and 65 and 2.5% 66 years or older.

Of the patients classified as having migraine, 94% (25 of 27 patients) had had the diagnosis confirmed by their practitioner or a neurologist while the remaining 6% had never been to a doctor specifically because of headache. Eight patients diagnosed previ-

Table 2. Symptoms/absenteeism (%).

One-sided pain	85
Aggravation by movement	59
Pulsating pain	44
Severe-moderate pain	94
Photophobia	100
Photo + phonophobia	81
Nausea and/or vomiting	94
Number of work days lost/year	
None	45
1–5	39
> 1 week	16

Table 3. Economic implications.

Assuming 6% of working population has migraine:		
Of these:		
39% absent 1–5 days/year	at least	58,500 days/year
16% absent > 1 week/year	at least	120,000 days/year
Absence from work because of migraine	at least	178,500 days/year
Every working day costs (wages + social services expenses + insurance, etc.)	approx.	NOK 750,-
Lost production = 2 × wages	approx.	NOK 1,500,-
Direct expenses: NOK 750,- × 178,500:		NOK 133 million
Lost production: NOK 1,500,- × 178,500:		NOK 266 million
Expenses/loss per year at least →		NOK 399 million
		£ 35 million
		US$ 68 million

ously as having migraine and two who considered their headaches to be due to migraine, did not satisfy the IHS criteria.

Patients with migraine had between 5 and 24 attacks per year, 70% of them had 12 or more attacks per year. The majority (47%) had attacks that lasted between 4 and 12 h, 37% had attacks lasting between 12 and 24 h and 16% had attacks lasting up to three days. Seventy percent described the headache as so severe that they needed bedrest. The characteristics of the headaches, associated symptoms and absenteeism from work due a migraine attack are given in Table 2.

Some migraine patients (18.6%) stated that they had warning phenomena in the form of visual disturbances, sensory symptoms, feelings of weakness or problems with speaking that lasted less than 1 h before the headache started.

As in other pain related conditions, the use of drugs varied considerably. Paracetamol alone or in combination with codeine was the most widely used followed by ergotamine, acetylsalicylic acid and non-steroidal anti-inflammatory drugs. Only one patient used prophylactic medication (β-blocker).

Discussion

Using a simple questionnaire we found a prevalence of migraine of 5.4% in men, 13.8% in women and 11.7% in the study population as a whole. This prevalence is somewhat higher than the generally quoted for population studies of around 6–7% (1), but this is most probably explained by the present study being of a patient population and by the fact that females were overrepresented. The prevalence is virtually identical in men and women to that found by Stewart et al. in their large national survey in the USA (5, 6). In epidemiological terms the study was small and some migraine patients could have been excluded because they presented as acute cases. We do, however, know that none of the acute cases consulted because of headache. Also, the prevalence of migraine in our study compared well with larger patient studies that also used the new IHS headache criteria (4, 5) and we believe therefore that the result represents the true situation. The marked difference in prevalence between males and females and the preponderance of migraine in females between the ages of 18 and 50 years is typical and also seen in other studies (5, 6).

Fifty-five percent of migraine patients were absent from work because of headache within the previous year. Based on a figure that at least 6% of the working population in Norway has migraine (2) this would mean about 150,000 people. Assuming absenteeism in 55% of migraineurs due to acute headache, this means 82,500 would have one or more days off work per year. Since absenteeism occurs mostly within the 1–3 day personally reported period in the Norwegian system, these costs are largely borne by employers (Table 3) and represent a substantial economic and financial loss.

Larger epidemiological studies to further validate the use of the questionnaire are in progress.

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