Headache Characteristics in Senior Medical Students in Turkey

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BİCAKCI, S., ÖVER, F., ASLAN, K., BOZDEMİR, N., SAATCI, E. and SARICA, Y. *Headache Characteristics in Senior Medical Students in Turkey*. Tohoku J. Exp. Med., 2007, **213** (3), 277-282 — Headache is one of the most common neurological complaints of the young population and it affects the quality of life due to limitation of daily activities. In this study, our main goal was to appraise the general headache characteristics in senior medical students just before graduation and to determine the impact of headache on the quality of life, as well as the general attitude of students about their headaches. The study group consisted of 141 senior students. As the first step, the question about “having headache within the past one year period” was asked. Of the 141 students, 127 students answering “yes” were invited to a face-to-face interview. Of these, 67 students (52.8%) participated in the second evaluation. The second evaluation consisted of history taking and neurological and physical examination. All subjects were classified according to the International Classification of Headache Disorders (2nd edition) criteria. Validated Turkish version of Migraine Disability Assessment questionnaire was given to the subjects to evaluate the socio-economical impact of headache. Tension-type headache, which is the most common form of primary headaches, was identified in 34 students (50.7%) out of 67 students. Migraine was detected in 31 students (46.3%). This is the first study performed on a face-to-face interview basis with medical students using the new classification criteria in Turkey. Astonishingly, most of the students ($n:65$) ignored their headaches and did not seek medication, despite the negative impact of headache on daily functioning and overall quality of life. ——— headache characteristics; migraine; tension type headache; medical students; Turkey

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Headache is one of the most common neurological complaints in the young population and it affects the quality of life due to limitation of daily activities. Therefore, headache is a medico-social and, ultimately, an economical problem, which has a great impact on a large number of the populations' life. The primary headaches like migraine

and tension type headache are the most important and common causes of this problem.

In 1997-98, on the basis of the International Headache Society criteria (1988), an epidemiological headache study was conducted throughout Turkey. This study revealed a prevalence of 34.6% for tension-type headache (TTH) and a

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prevalence of 13.2% for migraine in the young population (Turkish Headache Epidemiology Study Group 1998). In another study from Turkey targeting university students, migraine prevalence and TTH prevalence were reported as 12.4% and 20.3%, respectively (Kaynak et al. 2004; Demirkirkan et al. 2006).

Over the last 10 years, headache characteristics have been evaluated in various epidemiological studies targeting university student populations from various academic departments, as well as medical students, using different methodologies (Amayo et al. 1996, 2002; Mitsikostas et al. 1996; Sanvito et al. 1996; da Costa et al. 2000; Delue et al. 2001). We believe, as da Costa et al. (2000) do, that headache research on small and specific populations may be beneficial in determining the factors which influence the frequency and severity of headache.

Cukurova University is one of the leading state universities in Turkey. Medical education lasts for 6 years and passing a nationwide board exam following graduation is mandatory for specialization. Thus, senior students face a challenging period in the final year of their education, with the additional stress of the exam.

The aim in this study was to analyze the clinical characteristics of headaches in senior medical students right before graduation and their attitudes about their headaches.

METHODS

The study consisted of two stages. The investigational protocol described herein was approved by Cukurova University School of Medicine Local Ethics Committee.

Cases

Following the approval of the study by the faculty administration, complete list of the school of medicine seniors was obtained from the students' administrative office. The study group consisted of 141 senior students. Verbal consent was received from all students. At the first stage of the study, the question about "having headache within the past one year period" was asked. At the second stage, students answering "yes" were invited to a face-to-face interview.

Migraine base

Comprehensive medical and neurological history was taken using MigrainBase which has already been validated in our country by the Turkish Headache Study Group for the diagnosis and filing of migraine patients. The following are questioned in the last 5 pages of this document: The first page; demographic data, such as age, sex, and, habits, familial history, neuropsychiatric and systemic disease history. Second page; detailed headache information about its frequency, triggering and enhancing factors, duration with and without treatment, location characteristics, type of onset, symptoms of aura and prodrome, functional effects, signs during headache, postdromal symptoms and its type. Third page; systemic and neurological examination characteristics. Forth page; other investigations (such as radiological, biochemical). Fifth page; treatment and follow up. The onset time of headache was considered in 3 stages regarding the 6 years of curriculum period, as last year, 2-6 years and beyond 6 years. All cases were recorded on a database. An important feature of this database is its convertibility into SSPE and Excel documents. The final diagnosis lies in each subject's file.

Diagnostic criteria

All subjects were classified according to the International Classification of Headache Disorders, 2nd edition (ICHD-II) criteria along with the history and physical examination (Headache Classification Committee of the International Headache Society 2004).

Treatment and follow-Up

All subjects were assessed for treatment and follow up.

MIDAS

Validated Turkish version of MIDAS (**MI**graine **D**isability **AS**essment) questionnaire was given to the subjects to evaluate the socio-economical impact of this headache for the last 3 month period (Stewart et al. 1999a, b; Ertas et al. 2004). The MIDAS is used to assign a disability grade indicating overall intensity of illness during a 3- month recall period; grade I (minimal or infrequent disability, score 0-5); grade II (mild or infrequent disability, score 6-10); grade III (moderate disability, score 11-20); and grade IV (severe disability, score ≥ 21). The students were asked to grade the intensity of the pain (0, no pain; 10, severe pain).

Data analysis

All data were coded using the Statistical Package for the Social Sciences (SPSS) PC 6.0 data entry program. The data were summarized using frequency tables, and means and standard deviations for continuous variables. Frequency and contingency tables were used for the categorical data.

RESULTS

The study was carried out in 2006 between March and June. At the first stage of the study, 127 (90.1%) out of 141 students (47 women, 94 men) had “yes” as an answer for the presence of headache. At the presence of headache, all of them were asked to apply to the outpatient clinic. Out of 127 subjects, 67 (52.8%) who applied for the second evaluation, were enrolled in the study. Mean age was 24.6 years (22-28 years) and thirty of the subjects were women. Mean age did not differ significantly between men and women. Mean duration period of headache was 76 months (12-108 months). Seventy-three point one percent of all headache sufferers reported a positive family history of headaches, most often from their mother's side. Table 1 summarizes family headache history, habitual characteristics and migraine precursors of the study group.

According to ICHD-II, TTH was identified

in 50.7% ($n:34$) of the students. 67.6% ($n:23$) were men and 32.4% ($n:11$) were women (women/men ratio: 0.48). 43.3% ($n:29$) were regarded as infrequent episodic TTH, 3% ($n:2$) as frequent episodic TTH and 4.4% ($n:3$) as chronic TTH. Migraine was detected in 46.3% ($n:31$) of the subjects regardless of gender. Of 31 subjects, 18 (58.1%) were women and 13 (41.9%) were men (women/men ratio: 1.4). Men suffered more frequently from tension-type headaches than women and conversely, women suffered more frequently from migraine headaches than men. 20.9% ($n:14$) were considered as migraine without aura, 17.9% ($n:12$) as probable migraine, 6.0% ($n:4$) as typical migraine with aura and 1.5% ($n:1$) as chronic migraine. One case was regarded as episodic paroxysmal hemicrania and one case as rhinosinusitis headache (Table 2).

All subjects had normal neurological examinations. The case regarded as rhinosinusitis headache had paranasal sinus sensitivity on physical examination.

The attitudes of the students who were enrolled in the study about headaches, are displayed in Table 3. Most of the subjects performed self-medication infrequently for pain relief (76.1%), expect for severe headaches. Besides, sleeping was a frequent method to relieve pain.

TABLE 1. Family headache history, migraine precursors and habitual characteristics.*

Headache family history ($n = 50$)	First degree	72% ($n:47$)
	Mother	31.1% ($n:22$)
	Father and other first degree	77.7% ($n:15$)
	Two first degree	5.9% ($n:4$)
	Second degree and other	28% ($n:20$)
Migraine precursors ($n = 12$)	Motion sickness	10.4% ($n:7$)
	Atypical abdominal pain	10.4% ($n:7$)
Habitual characteristics ($n = 35$)	Caffein intake	35.8% ($n:24$)
	Smoking	32.8% ($n:22$)
	Frequent analgesic use	5.9% ($n:4$)
	Alcohol intake	4.5% ($n:3$)

*The percentages and the numbers in parentheses represent family history, migraine precursors and habitual characteristics independently of a total of 67 students who were enrolled in the study after the second evaluation.

TABLE 2. Frequency of headache types according to ICHD-II.

Classification according to ICHD-II criteria		% (n)*
Tension-type headache (TTH)		(n = 34)
	Infrequent episodic TTH**	43.3% (n:29)
	Frequent episodic TTH	3% (n:2)
	Chronic TTH	4.4 % (n:3)
Migraine		(n = 31)
	Migraine without aura	20.9% (n:14)
	Probable migraine	17.9% (n:12)
	Typical migraine with aura	6.0% (n:4)
	Chronic migraine	1.5% (n:1)
Other **		3% (n:2)

*The percentage of students (n:67) and headache types according to ICHD-II, respectively.

**Other: episodic paroxysmal hemicrania and rhinosinusitis headache.

TABLE 3. General attitude of the students about headache.*

Attitude about headache	%*	n*
Enrollment in the study	52.8	67
Self-medication	76.1	51
Analgesic use during headache	74.6	50
Frequent analgesic use	5.9	4
Consulting a neurologist or physician	2.9	2
Come to follow-up	0	0

*The percentage and the number of the students for each parameter are independent of each other; each representing the whole group of 67 (out of 127) students.

Four cases had more frequent analgesic intake than the study group average. NSAID drugs were mostly used and only two subjects referred to a physician (not neurologist) before. Eleven subjects were prescribed prophylactic medicine and were asked to refer to follow-ups. Sixty six subjects underwent attack treatment.

MIDAS

MIDAS was given to 31 subjects with migraine for the assessment of performance. Average number of days with headache was 6.2 in 3 months. A headache period longer than 20 days in 22.5% (n:7), impact on social activity in 74.1% (n:23) and curriculum interruption (mean 2.3

days) in 19.3% (n:6) of the subjects were found out. MIDAS scoring was as the following: 41.9% (n:13) for grade I, 19.3% (n:6) for grade II, 29.1% (n:9) for grade III, and 9.7% (n:3) for grade IV (Table 4).

DISCUSSION

In this study, our main goal was to appraise the general headache characteristics in senior medical students, who have already had headache classes just before graduation and board exams. Besides, we also aimed to determine the impact of headache on the quality of life, as well as the general attitude of the students about their headaches. This study, which was performed on a face-to-

TABLE 4. MIDAS grade and impact of headache in the previous 3 months.

MIDAS Grade	%	<i>n</i>
I. Mild impact	41.9	13
II. Moderate impact	19.3	6
III. Severe impact	29.1	9
IV. Very severe impact	9.7	3
Total	100	31

MIDAS: Migraine Disability Assessment. % and *n* represent the percentage and the number of a total of 31 students (with migraine) whom MIDAS was given.

face interview basis with senior medical students, is to be the first in Turkey. In our school of medicine, third year students receive 4 hrs of theoretical education on headache subject. Besides, they also participate in clinical practice in the 5th and 6th terms. This may be helpful in considering their attitudes about headache.

Only 52.8% (*n*:67) of all students with headache accepted to be admitted to our headache clinic. This indicates that only 50% (out of 127) of all subjects approximately, were concerned about their headaches. Regarding the time of onset, more than 50% of the subjects experienced headache at the beginning of medical education, whereas headache emerged in the 6th year of education in 6 students. Stress due to the final year curriculum might be considered as a triggering factor in the latter.

Headache characteristics were as TTH in 50.7% and as migraine in 46.3% of the subjects. Of the latter, 20.9% was migraine without aura and of the subjects with TTH, 43.4% had infrequent episodic TTH (Table 2). Other notable points were that migraine ratio in men students was closer to women. In contrast to general migraine characteristics and TTH ratio in men students was higher than it was in women subjects (Rasmussen et al. 1991; Schwartz et al. 1998). Considering similar studies in the literature based on questionnaires, migraine was detected in 40.2% in the study group by Sanvito et al. (1996). In another study

by da Costa (2000) reporting the general characteristics of headache, it was mentioned that migraine and TTH ratios were as 39.5% and 37.5%, respectively. Mitsikostas (1996) reported a migraine prevalence of 2.4% and a TTH prevalence of 9.5% by face-to-face interview and neurologic examination. It is not possible to compare our results with the aforementioned studies due to differences in methodology and subject selection (only 50% of the students with headache were enrolled in the study).

The most remarkable aspects of our study are that a face-to-face interview in a sufficient time was carried out and the new classification criteria was used.

The attitude of the seniors about their headaches is quite astonishing. Although in 40% of the students, a MIDAS grade of III-IV was determined, the ratio of a physician referral was extremely low. Only two cases, one with chronic TTH and the other with ETTH, were treated by a specialist. Analgesic intake for headache was 74.6%, whereas self medication ratio in the whole study group was 71.6%. Nevertheless, the latter reaches to almost 100% (48/50) as the subject using analgesics during attacks are taken into consideration. da Costa (2000) reported self medication ratio as 51.8% in his study. Another interesting point is that none of the subjects whom prophylactic treatment were initiated referred to follow-up controls.

There are limitations in our study. First, a limited number of students were involved. Another limitation is that a cross-sectional analysis with randomly selected students suffering from headaches was not performed.

Although our study was not cross-sectionally controlled, several conclusions have been obtained about the headache characteristics of senior medical students and their attitude about their own headaches. Headache was thought to be related with the curriculum period and graduation stress. Family history, particularly of the mother, was quite high for headache. Caffeine and smoking habits were notably high. Despite the impact on the quality of life, curriculum interruption and the occasional longer headache peri-

od, none of the subjects with migraine referred to a physician. It is not possible to make a statistical comment on their attitudes about headache. Nevertheless, it is certain that almost all of them ignored their headaches, despite their medical knowledge on the subject. Instead of consulting a neurologist, they performed self-medication and did not come to follow-ups which may indicate their lack of concern for headaches and its treatment.

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