

Cinzia Scalas
Lucia Calistri

Chronic daily headache in a paediatric headache centre

Published online: 20 July 2005

C. Scalas (✉) • L. Calistri
Centro Cefalee dell'Età Evolutiva,
Clinica Pediatrica Neurologica,
Azienda Ospedaliera-Universitaria
"Anna Meyer",
Via Luca Giordano 13, I-50132 Firenze, Italy
e-mail: centrocefalee@meyer.it
Tel.: +39-055-5662487
Fax: +39-055-5662916

Abstract The prevalence and the clinical features of chronic daily headache (CDH) were studied in 968 children and adolescents observed during a period of one year in the Headache Centre of the Anna Meyer Paediatric Hospital of Florence. Nine hundred and forty-four patients (97.52%) had primary headache according to ICHD-II, 24 subjects had secondary headache and 56 patients had CDH (5.93% of primary headaches). The mean age of subjects with CDH was higher than general (13.5 vs. 11.5 years), with a female preponder-

ance (69.6% vs. 30.4%). According to the ICHD-II, headaches were classified as chronic migraine in 10 patients (1.5.2 ICHD-II), chronic tension-type headache in 36 (2.3 ICHD-II), new daily persistent headache in 8 (4.8 ICHD-II) and 2 patients reported mixed pattern (chronic migraine+chronic tension type headache). Medication overuse was not implicated in our patients.

Key words Chronic daily headache • Children • Juvenile headache • Migraine • Tension type headache

Introduction

The term "chronic daily headache" (CDH) dates back to quite recent times. As a matter of fact it was introduced only around the early 1980s by researchers particularly interested in the study of patients with primary headaches that, at the time of observation, occurred almost every days for months or years without significant intervals [1, 2]. The initial interest in CDH was based upon the high number of patients suffering from this particular form of headache observed in the Headache Centres and the difficulty in including these headache syndromes in a well known system of classification [3].

Soon, two themes of great interest were evidenced to the researchers of this form of headache: the principal role,

within the CDH framework, represented by migraines that develop negatively in time and, secondly, the need to identify, classify and define its different subtypes [1, 2, 4].

In the 1988 IHS classification, CDH is not present and only chronic tension-type headache is mentioned, as if CDH identifies itself and ends in this single and particular form of primary headache [3]. A first attempt at CDH classification was made by Mathew in 1987, followed by Silberstein in 1994 and Manzoni in 1995 [1, 4, 5].

But it was only in the classification presented at XI International Headache Society Congress, held in Rome in 2003 and published by Cephalalgia in 2004, that the various CDH forms found an exact classification (ICHD-II) [6].

According to Silberstein's classification, the CDH is defined as a persistent experience of head pain lasting no less than 4 hours for more than 15 days per month for at

least 3 months [4]. According to the ICHD-II classification, the primary variety of CDH (each with or without medication overuse) includes chronic migraine, chronic tension-type headache, new daily persistent headache and hemicrania continua [6].

Objectives

The objective of this study was to evaluate the prevalence and to study the clinical features of CDH in children and adolescents observed in a paediatric headache centre.

Methods

We included in the study 968 subjects observed over a period of one year (from January to December 2004) in the Headache Centre of the Anna Meyer Paediatric Hospital of Florence. For

all subjects we evaluated clinical history, general and neurological examinations and, if necessary, laboratory tests, radiological and other instrumental investigations, according to guidelines for diagnosis and treatment of juvenile headache, elaborated by the Ad Hoc Committee of the Italian Society for the Study of Headache [7].

The headaches were classified according to the second edition of the International Classification of Headache Disorders (ICHD-II) [6].

Results

The 968 subjects observed had a mean age of 11.5 years (range 3–18): 455 males (47.1%) and 513 females (52.9%). Nine hundred and forty-four subjects (97.52%) suffered from primary headache and 24 subjects from secondary headache, as shown in Tables 1 and 2.

Fifty-six subjects, equal to 5.93% of primary headaches, suffered from forms of CDH. The mean age of subjects suffering from CDH was higher than the age of

Table 1 Primary headache classification of the study group, according to the 2004 ICHD-II criteria

Primary headache (ICHD-II)	Patients, <i>n</i>	%
Migraine without aura (1.1)	530	56.25
Migraine with aura (1.2)	18	1.93
Chronic migraine (1.5.1)	10	1.06
Abdominal migraine (1.3.2)	2	0.21
Probable migraine without aura (1.6.1)	114	12.08
Chronic migraine + chronic tension-type headache (1.5.1) + (2.3)	2	0.21
Migraine without aura + frequent episodic tension-type headache (1.1) + (2.2)	26	2.75
Migraine without aura + abdominal migraine (1.1) + (1.3.2)	2	0.21
Migraine without aura + headache attributed to rhinosinusitis (1.1) + (11.5)	4	0.42
Migraine without aura + headache attributed to systemic infection (1.1) + (9.2)	5	0.53
Benign paroxysmal vertigo of childhood (1.3.3)	18	1.91
Frequent episodic tension-type headache (2.2)	85	9.00
Chronic tension-type headache (2.3)	36	3.81
Frequent episodic tension-type headache + migraine with aura (2.2) + (1.2)	1	0.11
Infrequent episodic tension-type headache (2.1)	83	8.79
New daily-persistent headache (4.8)	8	0.85
Total patients	944	100

Table 2 Secondary headache classification of the study group, according to the 2004 ICHD-II criteria

Secondary headache (ICHD-II)	Patients, <i>n</i>	%
Trigeminal neuralgia (13.1)	1	4.17
Headache as an adverse event attributed to chronic medication (8.3)	2	8.34
Headache attributed to systemic infection (9.2)	13	54.16
Headache attributed to lymphocytic meningitis (9.1.2)	2	8.34
Headache attributed to rhinosinusitis (11.5)	5	20.83
Headache attributed to arterial hypertension (10.3)	1	4.17
Total patients	24	100

subjects suffering from other forms of headache (13.5 vs. 11.5 years). Chronic forms were more frequent in female subjects ($n=39$) than in male subjects ($n=17$), with a ratio of 2.29:1 (69.6% vs. 30.4%).

According to the ICDH-II, 10 patients (17.86%) had chronic migraine (1.5.2 ICDH-II), 36 (64.29%) had chronic tension-type headache (2.3 ICDH-II), 8 (14.29%) subjects had new daily persistent headache (4.8 ICDH-II) and 2 (3.57%) patients reported mixed pattern (chronic migraine + chronic tension-type headache).

Discussion

It is known that in juvenile patients, primary headaches are the most common form of recurrent headache, probably even with daily episodes, as organic causes of CDH (mostly represented by brain tumours, endocranial benign hypertension, alteration of ocular refraction and psychiatric pathologies) are rare in children and adolescents [8].

CDH is one of the more frequently seen headache syndromes at tertiary care centres worldwide and it is becoming a common problem also in the juvenile population. The prevalence of CDH in the adult population varies

between 1.5% and 7% [9, 10]; in children and adolescents it ranges from 0.2% to 0.9% [11, 12]. In our study performed in juvenile subjects we observed 5.93% of the patients with primary headaches suffered from CDH: this higher percentage is due to the fact that subjects presenting to a tertiary care centre have more serious and disabling headache forms [13].

In our study subjects with CDH had a mean age higher than that of total patients evaluated (13.5 vs. 11.5 years). We observed a predominance of the female sex (69.6% vs. 30.4%), as reported by other studies [14].

Medication overuse was not implicated in our patients, although parameters of overuse of medication have not yet been defined for children and adolescents. Chronic tension-type headache is the more frequent type of primary headache in our patients with CDH, in conflict with current data in medical literature that reported migraine as the most common form [14].

Clinical patterns and causes of chronic daily headache in children and adolescents are probably different from those of adults and diagnostic criteria proposed by the ICDH-II suitable for adults are difficult to apply to juvenile headache.

Further follow-up studies are necessary to improve knowledge, treatment and outcome of CDH in children and adolescents [15].

References

1. Mathew NT, Reuven U, Perez F (1987) Transformed or evolutive migraine. *Headache* 27:102-106
2. Mathew NT (1993) Transformed migraine. *Cephalalgia* 13[Suppl 12]:78-83
3. Headache Classification Committee of the International Headache Society (1988) Classification and diagnostic criteria of headache disorders, cranial neuralgia and facial pain. *Cephalalgia* 8[Suppl 7]:1-96
4. Silberstein SD, Lipton RB, Solomon S, Mathew NT (1994) Classification of daily and near-daily headache: proposed revisions to the International Headache Society criteria. *Headache* 34:1-7
5. Manzoni GC, Granella F, Sandrini G, Cavallini A, Zanferrari C, Nappi G (1995) Classification of chronic daily headache by International Headache Society criteria: limits and new proposals. *Cephalalgia* 15:37-43
6. Headache Classification Subcommittee of the International Headache Society (2004) Classification and diagnostic criteria for headache disorders, cranial neuralgia and facial pain, 2nd edn. *Cephalalgia* 24[Suppl 1]:1-160
7. Ad Hoc Committee della Società Italiana per lo Studio delle Cefalee (2003) Linee guida per la diagnosi e la terapia della Cefalea Giovanile. *Il Giornale SISC* anno V[Suppl 1]:2-37
8. Abu-Arafeh I (2001) Chronic tension-type headache in children and adolescents. *Cephalalgia* 21:830-836
9. Sillanpää M, Piekkala P, Kero P (1991) Prevalence of headache at preschool age in unselected child population. *Cephalalgia* 11:239-242
10. Abu-Arafeh I, Russel G (1994) Prevalence of headache and migraine in schoolchildren. *Br Med J* 309:765-769
11. Castillo J, Muñoz P, Guitera V, Pascual J (1999) Epidemiology of chronic daily headache in the general population. *Headache* 39:190-196
12. Rasmussen BK (1995) Epidemiology of headache. *Cephalalgia* 15:45-68
13. Guidetti V, Galli F, Cerutti R, Fabrizi P (2000) Chronic daily headache in developmental ages: diagnostic issue. *J Headache Pain* 1[Suppl 1]:S89-S94
14. Esposito SB, Gherpelli JLD (2004) Chronic daily headaches in children and adolescents: a study of clinical characteristics. *Cephalalgia* 24:476-482
15. Galli F, Patron L, Russo PM, Bruni O, Strambi LF, Guidetti V (2004) Chronic daily headache in childhood and adolescence: clinical aspects and a 4-year follow-up. *Cephalalgia* 24:850-858