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 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 [6].
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, n | %   |
|---------------------------------------------------------------|-------------|-----|
| 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, n | %   |
|---------------------------------------------------------------|-------------|-----|
| 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**

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