

CHRONIC DAILY HEADACHE: MEDICATION OVERUSE AND PSYCHIATRIC MORBIDITY

Gupta Ravi, Bhatia Manjeet S, Chhabra Vishal

ABSTRACT

Objectives: The objectives of the study were: (i) To assess the frequency of different chronic daily headaches in patients using ICHD-2 criteria (ii) To find out the frequency and type of medication overuse and psychiatric morbidity in chronic daily headache subjects.

Design: Cross sectional observational study.

Place and duration of study: The study was conducted in the psychiatry outpatient department of a teaching medical institution during January to September 2005.

Subjects and Methods: Subjects suffering from chronic daily headache were recruited from a specialized headache clinic in a tertiary care hospital's Psychiatry department. The diagnoses were made according to ICHD-2. Medication overuse was defined according to ICHD-2 criteria and psychiatric illness was diagnosed following ICD-10 criteria in CDH patients. In subjects fulfilling the criteria for 'medication overuse', the culprit drug was stopped immediately and prophylactic therapy was started.

Results: Frequency of chronic daily headache was 37% in this sample. Females outnumbered males (1: 1.52) and formed higher number of migraine cases ($p=0.02$). Tension Type Headache (TTH) was most frequent headache (48.5%). According to ICHD-2 criteria, probable medication overuse headache could be diagnosed in all patients, which precluded the diagnosis of chronic migraine and chronic TTH.

Psychiatric morbidity was seen in 70.3% subjects and mild to moderate depression was the most common illness (53%). TTH subjects showed predisposition for anxiety disorders (OR= 6.41; $p= 0.004$).

Conclusion: TTH is the most common subtype of CDH when ICHD-2 is followed. Medication overuse is common in this group of patients and these probably should be discontinued according to substance dependence de-addiction model for better compliance, and even more slowly in subjects with chronic migraine headache. Psychiatric morbidity is prevalent in CDH patients and requires special attention.

Key words: Chronic Headache, Psychiatric morbidity, Treatment adherence, Analgesic overuse.

INTRODUCTION

Chronic daily headache (CDH) is defined as a headache that occurs 15 days or more a month¹. It is one of the most common cause of referral to specialized centers with prevalence of approximately 3.2- 4.7% in general population¹⁻³ and 50% in clinic's population⁴.

ICHD-2⁵ classifies primary daily headaches with their episodic variants, which may be beneficial to the

research purpose, but for clinical practice grouping these patients under a single entity i.e., CDH is more sensible¹. Among primary CDH, the migraine or transformed migraine is more common than the TTH in specialized clinics, while the opposite is seen in general practice¹. Other studies have shown that transformed migraine^{3-4, 6} was the most common diagnosis in this group and Tension Type headache comprised only a small part.

This is an important clinical group since these patients suffer frequent absenteeism and poor quality of life⁷ in addition to the higher prevalence of psychiatric illnesses^{1,4,8-9} and medication overuse^{1,10}.

However, data regarding prevalence of CDH in using ICHD-2⁵ criteria for chronic primary headaches is scarce as most of the past studies had used Silberstein et al's criteria¹¹ for diagnosis of chronic migraine. To our knowledge, there is only one report¹² that examined the prevalence of chronic migraine following ICHD-2. Inconsistencies regarding the definitions of CDH and medication overuse between these studies make the results difficult to interpret 'en-mass' and thus results can not be

Gupta Ravi, MD, Department of Psychiatry, University College of Medical Sciences and GTB Hospital, Shahdara, Delhi (India) 110095.

Bhatia Manjeet S, MD, Department of Psychiatry, University College of Medical Sciences and GTB Hospital, Shahdara, Delhi (India) 110095. D-1, Naraina Vihar, Delhi 110028, Ph-0091-98101-61790. E-mail: manbhatia1@rediffmail.com

Chhabra Vishal, DNB, Department of Psychiatry, University College of Medical Sciences and GTB Hospital, Shahdara, Delhi (India) 110095.

Correspondence:

Dr. Manjeet Singh Bhatia

used in clinical practice. There is also paucity of data regarding prevalence of different psychiatric illnesses and type of medication overuse in these patients following ICHD-2 criteria. Hence, present study was planned to address these issues.

SUBJECTS AND METHODS

Subjects presenting with complaints of headache in the Psychiatry outpatient department during six study months were screened for the presence of chronic daily headache. The diagnosis of headache was based upon history (see below), clinical examination and wherever required, laboratory investigations. Those who suffered secondary headache were excluded from the study.

Informed consent was taken from the subjects before inclusion into the study and details regarding their demographic data were gathered. We recorded following data for the diagnosis of headache: Time since onset, average number of attacks per month, average number of days for which patients suffered pain in past six months, change in the pain since onset (Frequency, duration and severity of episodes), laterality (Unilateral, bilateral, changing), location (Temporal, frontal, occipital, parietal, orbital, generalized, neck), quality (aching, pulsating/ throbbing, pressing, tightening, band like etc), duration of episode, usual time of onset, precipitating and relieving factors, radiation of pain, premonitory symptoms, associated symptoms (phonophobia, nausea-vomiting, photophobia, red eye, lacrimation, nasal blockade, worsening with exertion, dizziness, ptosis etc). Following this physical examination was carried out as described by Mongini¹³.

Few subjects were meeting criteria for more than one primary headache but, in those cases the headache which was fulfilling criteria for 'chronic' was kept as main diagnosis and the headache which was present intermittently before the onset of chronic headache, was diagnosed as the co-morbid headache.

Headaches were diagnosed based on ICHD-2 criteria. Medication overuse headache was defined as intake of analgesics more than 15 times a month for at least 3 months i.e., criteria B of 8.2.3; and for combinations and ergotamine more than 10 days a month for 3 months- i.e., criteria B of 8.2.1 and 8.2.5 respectively.

During the process of data acquisition we encountered following problems in diagnostic classification: (i) Diagnosis of Chronic Migraine (CM; ICHD 1.5.1) and Chronic Tension Type Headache (CTTH; ICHD 2.3) could not be made because it requires absence of Analgesic overuse headache (ICHD 8.2.3) (ii) Analgesic overuse headache could not be diagnosed because study was terminated at 6 weeks due to poor follow-up. (iii) New Daily Persistent Headache (NDPH; ICHD 4.8) could not be diagnosed because information gathered was retrospective and all subjects were fulfilling the criteria B (An-

algesic overuse for > 15 days a month for > 3 months) of analgesic overuse headache (ICHD 8.2) at the time of diagnosis. Due to these problems diagnosis of (i) 'Migraine with aura with Probable Chronic Migraine with aura with Probable MOH', (ii) 'Migraine without aura with Probable Chronic Migraine without aura with Probable MOH', and (iii) 'TTH with Probable Chronic Tension Type Headache with Probable Medication Overuse Headache' were made^{5,14}. Though, for the sake of simplicity of presentation, designations like Migraine with aura, Migraine without aura and TTH for categories (i), (ii) and (iii) were used in this study respectively.

Details regarding behavioral symptoms were gathered from the patient in the presence of a reliable informant, who confirmed the history, and diagnosis was made according to ICD-10 criteria¹⁵. We could not use any structured interview schedule because most of the patients could not speak English, and Hindi version of the same is not available, in addition to reasons discussed later. During diagnosis of psychiatric morbidity it was assured that these behavioral symptoms were not limited to headache episodes and they occurred independent to these episodes. If any subject had symptoms lasting for headache episode only, diagnosis of co-morbid psychiatric disorder was not made.

All the subjects were kept on the prophylactic drugs according to available literature^{13,16} and their abused medications were stopped immediately. It resulted in a very high attrition rate of subjects from the study, the reasons for which are discussed later.

For statistical analysis SPSS Version 11 for Windows was used. For comparison of proportions (Categorical data), Chi-square test with category collapse and Fisher exact test were applied. For numerical variables independent sample 't' test was used and logistic regression was applied to find out odds ratios (OR).

RESULTS

A total of 245 subjects reported primary headache out of whom 91 (37.14%) were suffering from chronic headache. Females were overrepresented in the sample compared to males in a ratio of 1: 1.52. Mean age of subjects in the study was 33.98 + 10.03 years (Range 13- 65 years) and there was no significant difference ($t=0.23$; $P= 0.81$) between age of male and female subjects (34.29 vs 33.80).

In patients with chronic daily headache group, gender significantly affected ($p=0.002$) the frequency of headache as migraine with or without aura was more frequent among females while TTH had opposite trend. Overall, TTH was the most common diagnosis followed by migraine without aura. Medication overuse was present in all CDH subjects, but due to poor follow up, study was terminated prematurely and diagnosis of Probable Medication Overuse Headache was made.

Table 1
General Characteristics of the study sample.

S. No.	Variable	Male (N= 36)	Female (N= 55)	Total (N=91)	
1.	Principal Headaches*				p= 0.002
	• TTH#	27 (75%)	21 (33.2%)	48 (52.7%)	
	• MO@	6 (16.7%)	18 (32.7%)	24 (26.4%)	
	• MA\$	3 (8.3%)	16 (29.1%)	19 (20.9%)	
2.	Principal Headaches**				
	• TTH#	27 (75%)	21 (38.2%)	48 (52.7%)	
	• MO@	3 (8.3%)	3 (5.5%)	6 (6.6%)	
	• MA\$	2 (5.6%)	3 (5.5%)	5 (5.5%)	
	• MO + TTH	2 (5.6%)	10 (18.2%)	12 (13.2%)	
	• MO + Unspecified	1 (2.8%)	5 (9.1%)	6 (6.6%)	
	• MA + TTH	1 (2.8%)	7 (12.7%)	8 (8.8%)	
	• MA + Unspecified	nil	6 (10.9%)	6 (6.6%)	
3.	Psychiatric illness				0.91
	• Absent	10 (27.8%)	17 (30.9%)	27 (29.7%)	
	• Depression with Somatoform	19 (52.8%)	29 (52.7%)	48 (52.7%)	
	• Anxiety Disorders	7 (19.4%)	9 (16.4%)	16 (17.6%)	

* Following ICHD-2 criteria limited to different episodes.

** Following ICHD-2 criteria applicable to single episodes.

Chi-square test could not be applied because of small expected frequencies in more than 20% of cells.

TTH with probable chronic TTH with probable MOH.

@ Migraine without aura with probable chronic MO with probable MOH.

\$ Migraine with aura with probable chronic MA with probable MOH.

Co-morbid headaches are shown in Fig. 1. Few subjects in TTH group also had TTH as comorbid headache because in these cases Episodic TTH was present well before the onset of Probable CTTH.

As a result of abrupt discontinuation from over-used analgesics, the entire sample was lost to follow up by the end of six weeks. Figure 2 shows that MA patients were first to lost to follow up, while TTH subjects were the last. Also notable is the finding that a substantial number of subjects were lost to follow-up by the end of first week (i.e., start of prophylactic drugs and withdrawal from overused medication).

Psychiatric morbidity was seen in 70.3 % subjects. Gender did not affect occurrence of psychiatric morbidity (P= 0.91). Subjects with TTH were more likely to suffer from anxiety disorders (OR= 6.41; p= 0.004), while analysis for depression did not reach statistical significance (OR= 1.76; p= 0.244).

Fig. 1: Co-morbid Headaches in different Primary CDH Groups

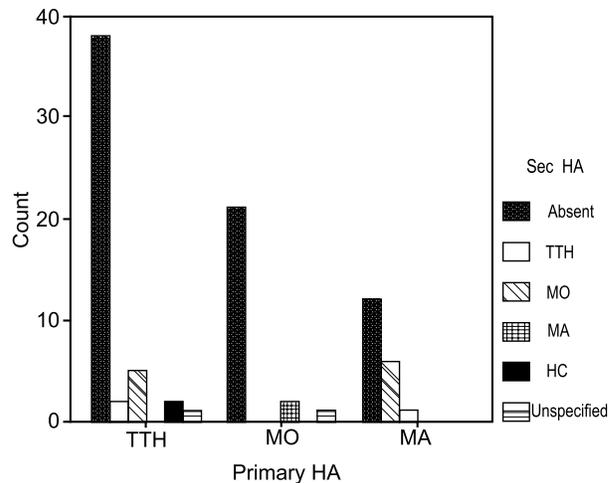


Fig. 2: CDH subjects lost at weekly follow-up after acute withdrawal from overused medication

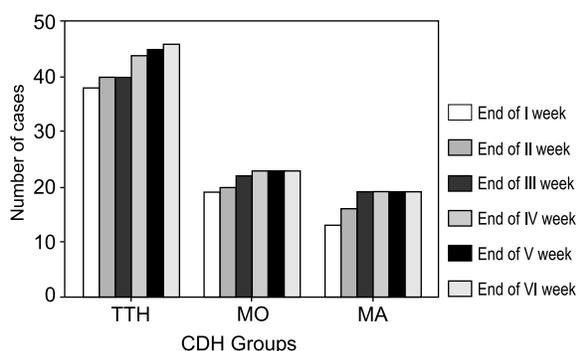


Table 2

Distribution of psychiatric morbidity in different Primary Headache Groups[§]

S.	Psychiatric morbidity	Headache Type		Total
		TTH* (%)	Migraine# (%)	
1	Absent	10 (20.8%)	17 (39.5%)	27
2.	Depression and Somatoform Disorders	26 (54.2%)	22 (51.2%)	52 P=0.05
3.	Anxiety Disorders	12 (25%)	4 (9.3%)	16
Total		48	43	91

* Episodic Frequent/Infrequent TTH with probable chronic TTH with probable MOH

includes Migraine with aura with Probable Chronic Migraine with/ without aura with Probable MOH; Migraine without aura with Probable Migraine with/without aura with Probable MOH.

§ Criteria followed in clinical context.

DISCUSSION

Prevalence of CDH and loss at follow-up

In present study 37% subjects attending special clinic suffered from CDH. Nearly similar figure has been reported by Chakravarty⁴ in the Indian population in a specialty clinic. These patients comprise a substantial number and should be given due concern. Like present study, higher number of female subjects (72%³, 83%⁴, 65%⁶ and 73%¹⁷ in chronic daily headache group as a whole and also in migraine subgroup) has been reported³⁻⁴.

In this study all the subjects were lost to follow up at six weeks. Similar results have been reported from Indian population and acceptance of headache as a part of life; change of doctors and way out to alternate forms of therapy were implied as the causative factors⁴ in those studies. Another reason for this could be sudden discontinuation of overused medication which usually results in rebound headache. Abrupt discontinuation has been tried previously¹⁸, but in that study use of NSAID drug other than the one overused was allowed to a maximum of two times a week. Despite this only 52% were retained till the end of that study¹⁸. In present study MA had the poorest compliance to the prophylactic therapy while the TTH subjects were the last. We could not find any other study that reported similar or contradictory findings. These findings on retrospect make one to think of having a different approach to stopping the overused medication. The possibility of gradual tapering of overused drugs accompanied with explaining the purpose of taking such a step to the patients may help in getting better compliance and retention in the study.

Frequency of primary headaches according to ICHD-2:

In this study TTH was most common type of primary CDH followed by Migraine. This observation does not match with previous reports that describe high prevalence of transformed migraine- e.g., 55%³, 82%⁴, 87%⁶. Definition of chronic headache that was followed in previous studies influenced the prevalence of migraine as they used Siberstein et al's criteria^{11,19} that are different from ICHD-2 criteria⁵ for Chronic Migraine in three ways: (i) they rely on the past history of episodic migraine (ii) all 15 or more episodes in a month need not to fulfill criteria for migraine (iii) and lastly, decrease in the severity of headache is allowed. Recently, Bigal et al¹² reported that ICHD-2 criteria for migraine are too restrictive and result in multiple diagnostic entities specially the CTTH along with CM. 'CM without TTH' could not be found even in a single case⁶ while pure chronic migraine cases made a little number when ICHD-2 was followed¹². Moreover, it is known that chronic migraineurs lose typical features and acquire TTH like picture¹⁴ and chronic analgesic or ergot use also contributes to changes in presentation of episodic migraine to TTH¹⁴. Monzini et al²⁰ reported that almost all the migraine subjects lost pulsating quality, acquired bilateral location and mild-moderate intensity when it became chronic. Therefore, many of the chronic migraine subjects that lost migrainous character in present study were spuriously diagnosed as TTH sufferers. In addition, recruitment bias as subjects were enrolled from the Headache Clinic of a Tertiary care Psychiatry department could have also contributed to higher prevalence of CTTH.

In this study, NDPH was not diagnosed because of the retrospective data analysis and the medication overuse, while it has been reported in other studies⁶. In addition, NDPH in itself does not have any particular charac-

teristics, and different primary headaches e.g., Migraine and TTH can be kept under this rubric⁶ provided they fulfill the duration criteria of NDPH.

Medication overuse:

Analgesic overuse was found in all subjects (100%) in the present study. On the contrary, previous reports describe analgesic overuse in 34%³, 43%⁴, and 82%⁶ chronic daily headache subjects only. This difference could be secondary to definition of 'overuse' as previous^{3,4,6} studies followed Silberstein et al's¹⁹ criteria that require more number of days a month than IHS criteria and specifies minimum amount of the drug in question. Chakravarty⁴ reported analgesic overuse only in migraine group and he could not find a single case of medication overuse in TTH group, contrary to findings of this study. It is possible that difference in headache definition as explained above along with difference in the population led to these results. Most of the patients were suffering from psychiatric illness and were working on daily wages; both the factors in addition to cheaper and easy availability of acute treatment drugs⁴ could have promoted medication overuse. Moreover, headache was described as most significant predictor for drug overuse²¹.

Pattern of medication overuse was also dependent on the type of headache. TTH subjects used simple analgesics while migraine subjects consumed combination of analgesics or analgesics with ergot. This pattern demonstrates prescription practices since combined analgesics/ ergot are usually prescribed to migraine subjects and simple analgesics to TTH, as well as availability of drug, as overuse of Over-The-Counter drugs is more common compared to prescribed medicines³⁻⁴.

Psychiatric illness:

Present study reports prevalence of psychiatric illness in CDH subjects to be 70%. Previous studies²²⁻²³ using SCID (Structured Clinical Interview for DSM IV) and MINI (Mini International Neuropsychiatric Interview) for Axis I disorder demonstrated prevalence of 90% and 78% respectively, while one study⁹ that used only HADRS (Hospital Anxiety and Depression rating scale) reported a prevalence of 42%. Only available Indian study⁴ that was based on clinical examination using DSM IV criteria showed a prevalence of nearly 50%. Differences can be attributed to the use of structured interviews in the above mentioned studies²²⁻²³ as structured interviews have limited validity and are sensitive for more severe illnesses only²⁴. Possibility of spurious patients response on these interviews can not be ruled out as rewording of the question is not allowed²⁴, ignoring whether patient had understood the question or not. On the other hand, HADRS detects only 'caseness' and not the individual diagnosis⁹. Although subjects in the present study were recruited from psychiatry OPD, even then it did not influence the prevalence of psychiatric illness since they were attending 'headache clinic' with primary complaint of headache rather than psychiatric illness.

In this study, psychiatric illness was less common in migraine group compared to TTH group. TTH and Migraine headache subjects had nearly comparable prevalence of depression while anxiety disorders were more common among TTH subjects. Similar results have been reported in the past⁴. It can be further substantiated by biochemical findings as already reported in the literature showing the decreased platelet serotonin, up regulation of 5HT 2A receptors in CDH subjects¹⁰ and serotonin abnormalities in depression.

Limitations of the study:

This was a retrospective, recall based study conducted in a tertiary care centre. Therefore, possibility of recall bias can't be ruled out but to a limited extent only, as most of the subjects with chronic headache tend to remember headache characteristics. Second, results of a specialized center can not be applied to general population.

In conclusion, a substantial number of patients with CDH suffer from psychiatric disorders as well as medication overuse. Sudden discontinuation of abused medication leads to poor compliance to prophylactic treatment forcing us to rethink the treatment strategies required to retain patients while discontinuing the overused medication. The substance dependence de-addiction model may be tried and tested here.

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