

## Study of Clinical Profile of Patients with Medication Overuse Headache

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**Abstract :** Headache is a very common health problem in India, but a percentage of the general population suffer from chronic daily headache (CDH). Chronic headache disorders are a major public health concern given the large amount of associated disability and financial costs, to the patient, his family and to society. Inappropriate use of symptomatic medication for relief of chronic headache may lead to worsening of headache whose pathophysiology is not completely known and is termed as medication overuse headache (MOH). Studies mainly performed in tertiary care centres found that patients with migraine and to a lesser extent, with tension type headache are at risk for worsening of their headache under regular intake of painkillers. The high burden of MOH to the patient and his family is unnecessary as it is preventable by avoiding dependency on pain killers and by decreasing the frequency of their administration or by using prophylactic treatment for primary headache on time. Drugs that contain caffeine, tranquilizers, opioids or barbiturates should be avoided. Furthermore, the risk factors and variables associated with MOH should be studied thoroughly in a patient. We are doing this study because there is little data about MOH in India.

**Keywords:** Chronic daily headache, Chronic migraine, Chronic tension type headache, Medication overuse headache

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### I. Introduction

MOH is one of the most common headache disorders after migraine and tension type headache and a common public health problem with an incidence of 3.08% in Indian clinic [1]. MOH is headache occurring on 15 or more days per month developing because of regular overuse of acute or symptomatic headache medication (on 10 or more, or 15 or more days per month, depending on the medication) for more than 3 months [2]. There is little recent data about MOH in India. The current research aims at studying the clinical profile of patients with MOH and to investigate all the variables associated with MOH simultaneously.

### II. Methods

#### 2.1. Sample and data collection

Twenty consecutive patients of MOH were enrolled from OPD/IPD of Grecian Super Specialty Hospital between Oct 2017 and Nov 2017. A database was created, and it consisted of the following: (a) Name, age, gender, level of education (b) Primary type of underlying headache; (c) Medication overused (d) Duration of headache; (e) Obesity; (f) Musculoskeletal pain; (g) Gastro-intestinal symptoms; (h) Sleep disturbance; (i) history of prior stressful event; (j) Symptoms of Anxiety or Depression; (k) Severity of headache. Tools used are (a) HADS – Hospital Anxiety and Depression Scale (b) HIT -6 – Headache Impact Test

#### 2.2 Case inclusion criteria

(a) Patients fulfilling the criteria of MOH according to 2013 International Classification of Headache Disorders, 3<sup>rd</sup> edition Beta version (ICDH-3 Beta) [2]; (b) patients willing to participate in study after giving written consent; (c) Patients older than eighteen years and younger than sixty-five years of age.

#### 2.3 Case exclusion criteria

(a) Patients with missing data on medication usage; (b) patients who do not give written informed consent; (c) Patients with Secondary causes of headache; (d) Patients with systemic comorbidities like renal failure, cardiac failure and liver failure

**III. Results**

Data from the study revealed that out of 20 MOH patients 5 patients (25 %) were males and 15 patients (75 %) were females (Table 1). Most common age group affected is 31 to 40 years (50 % or 10 patients) followed by 41 – 50 years (20% or 4 patients) (Table 2). MOH was most common among patients with primary education. i.e those educated upto 7<sup>th</sup> standard (50% or 10 patients) followed by patients with education up to high school (25% or 5 patients) and was less common among illiterate and graduates and post graduates (Table 3). Most common primary type of headache present in our MOH patients is chronic migraine (CM) (50% or 10 patients) followed by chronic tension type headache (CTTH) (25% or 5 patients) and the rest had other type of headache like chronic cluster headache, new daily persistent headache or hemicrania continua (Table 4). Duration of primary headache was maximum for migraine (6.27 yrs) followed by tension type headache (5.76 yrs).

Risk factors associated with MOH in our patients was obesity in 6 patients (30%), musculoskeletal pain in 14 patients (70%), gastrointestinal disturbances in 12 patients (60%), prior stressful event in 4 patients (20%) and sleep disturbances was found in 16 patients (80%) (Table 5). Out of 20 MOH patients 15 patients (75%) suffered from depression while 14 patients (70%) suffered from anxiety according to HADS. Impact of headache calculated by HIT – 6 score suggested severe impact on 14 patients (70%). Most common overused medication was analgesics or combination analgesics in 14 patients (70%) followed by triptans in 6 patients (30%) (Table 6).

**IV. Figures And Tables**

**Table 1: Gender distribution in MOH patients**

Gender	Diagnosis			Total
	Chronic tension type headache	Chronic migraine	Other types	
Male	1	3	1	5
Female	4	7	4	15
Total	5	10	5	20

**Table 2: Age distribution in MOH patients**

Age in years	Diagnosis			Total
	Chronic tension type headache	Chronic migraine	Other types	
18-30	1	1	1	3
31-40	1	7	2	10
41-50	1	2	1	4
51-65	2	0	1	3
Total	5	10	5	20

**Table 3: Level of education in MOH patients**

Level of education	Diagnosis			Total
	Chronic tension type headache	Chronic migraine	Other types	
Illiterate	1	0	0	1
Primary School (Up to 7 <sup>th</sup> standard)	3	5	2	10
High school (8-12 <sup>th</sup> standard)	1	3	1	5
Graduate	0	1	1	2
Post graduate	0	1	1	2
Total	5	10	5	20

**Table 4: Type of primary headache in patients with MOH**

Diagnosis	Frequency	Percent
Chronic tension type headache	5	25%
Chronic migraine	10	50%
Other types	5	25%
Total	20	100.0

**Table 5:** Risk factors in patients with MOH

Diagnosis	Stressful life event	Obesity	Musculoskeletal pain	GI signs & symptoms	Sleep disturbance	Depression	Anxiety
Chronic tension type headache	1	4	7	5	8	8	6
Chronic migraine	2	2	7	4	6	6	7
Others	1	0	0	3	2	1	1
Total	4	6	14	12	16	15	14

**Table 6:** Drugs most commonly overused in MOH patients

Diagnosis	Analgesics or Combination analgesics	Triptans
Chronic tension type headache	4	1
Chronic migraine	6	4
others	4	1
Total	14	6

## V. Discussion

MOH is among the most important health problems worldwide. Epidemiological studies worldwide in adults demonstrate that headache, especially MOH is associated with reduced quality of life. In India, only few studies have been done on MOH. Present study was undertaken to know the clinical profile of patients of MOH in a tertiary care hospital in Punjab. The study sample consisted of 20 patients fulfilling the ICHD 3 beta (2013) criteria of MOH. In our study out of 20 patients of MOH, chronic migraine is the most common type of primary headache followed by chronic tension type headache which is in concordance with a retrospective study by Ravishanker et al [1] out of 184 MOH patients, 156 had episodic migraine, 12 had tension type headache and 16 patients had NDPH.

Demographic characteristics in our study reveals that age group most commonly affected is between 31-40 years (50%), followed by 18-30 years (25%). Patient population in our study comprised of 5(25%) males and 15(75%) females in the range 18 – 65 years. The salient features of our study are that most MOH patients are educated up to primary school (50%), followed by high school patients educated from 8<sup>th</sup> to 12<sup>th</sup> standard (25%).

In a study conducted in Taiwan by Juang et al [3] on CDH patients, females were most commonly affected (72.2%), mean age was 39 and most patients were educated up to primary school (22.9%) which coincides with results of our study. In our study most commonly overused medications in MOH patients are analgesics or combination analgesics alone (70%) followed by triptans (30%). These results do not correspond to the results of a retrospective study by Ravishanker et al [1] according to which ergotamine was the most commonly overused medication in MOH patients (57%) followed by combination analgesics (38%) followed by triptans (5%) but these differences are because of reduced availability of ergot derivatives now a days in India and combination analgesics are freely available. Similar retrospective study done in Japan by Imai et al [4] concluded that in MOH patients most commonly overused drug class is combination analgesics (85%) which corresponds to the results of our study. In another study of 207 MOH patients by Radat et al [5] most commonly overused medications were analgesics in combination with opioids (42%) which is also consistent with our results. Our study suggests that history of prior stressful life events is present in 20% patients of MOH, 30% patients in our study are obese, musculoskeletal complaints are present in 70% patients, GI signs and symptoms are present in 60% patients and 8% patients have history of sleep disturbances. As suggested by our study various population-based studies by Scher et al and Sance et al [6,7] have also identified possible risk factors for the development of chronic headache, such as age, female gender, low socioeconomic status, non-married civil status, obesity, snoring, comorbid musculoskeletal pain, head and neck injury, and stressful life events. In a similar study by Assendelft W et al [8] high prevalence of smoking, high body mass index and sleeping problems were found among MOH patients.

In our study 75% MOH patients suffered from depression (HADS-D $\geq$ 11) while 70% MOH patients suffered from anxiety disorder (HADS-A $\geq$ 11). Out of 20 MOH patients, anxiety and/or depression is most common in CTTH patients (70%) followed by CM patients (65%). According to retrospective study by Ravishanker et al [1] both depression and anxiety disorders were seen in patients with MOH as in our study. BDI results showed normal disturbances in four patients, mild mood disturbance in six, borderline clinical depression in 25, moderate depression in 144 and severe depression in five patients. The HARS results showed that 116 patients had a mild level of anxiety, 65 were between a mild and moderate level of anxiety and three patients were between a moderate and severe level of anxiety. Results of our study are also consistent with a study conducted by Gupta et al [9] also showed that out of 91 CDH patients depression was found in 51% CM patients and 54% CTTH patients. A cross sectional multicenter study conducted in Australia by Zebenholzer et al [10]

using HADS showed that anxiety and depression was more common in chronic migraine patients than episodic migraine patients (64% v/s 41% p value<.0001).

Impact of headache on MOH patients in our study was calculated by HIT-6 SCORE and suggests that HIT-6 score of 59-68 suggesting severe impact is present in 70% cases of MOH. A study done by Dawn Buse et al [11] also demonstrates that among patients with migraine in the population, the headache impact of CM is greater than the impact of EM(episodic migraine) as measured by HIT-6 scores.

## **VI. Conclusion**

Our study reveals the presence of multiple risk factors associated with MOH and thus highlights the importance of identification of these factors and the need of a multidisciplinary approach for prevention as well as treatment of MOH.

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