VOLUME - 11, ISSUE - 05, MAY - 2022 • PRINT ISSN No. 2277 - 8160 • DOI : 10.36106/gjra

Original Research Paper

Psychiatry

COMPARISON OF PSYCHIATRIC COMORBIDITIES AND QUALITY OF LIFE IN PATIENTS WITH CHRONIC HEADACHE AND INDIVIDUALS WITHOUT HEADACHE: CROSS-SECTIONAL STUDY IN TERTIARY CARE HOSPITAL

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ABSTRACT

Background- Headache a common complaint in OPD. Almost everyone has suffered an episode headache in their lifetime. 1 year prevalence for headache is 63.9%. Headache is divided into primary and secondary. Primary headaches are broadly classified into migraine, tension type headache (TTH) and trigeminal autonomic cephalalgias. Migraine is prevalent at 25% and TTH at 35%. Chronic headache defined as headache lasting for more than 15 days/month. Migraine is the most debilitating disorder. When there is an increased frequency in headache episodes, as in chronic migraine the debility increases. Psychiatric disorders like anxiety and depression are independently debilitating. The effect on quality of life is compounded when both the disorders are present together. **Materials and Methods-** It was a cross-sectional study, conducted at a tertiary care centre after obtaining written informed consent of 35 cases and 35 controls. Each participant was administered a socio-demographic proforma, World Health Organization-Quality of Life- BREF(WHOQOL_BREF) and Mini International Neuropsychiatric Iinterview(MINI) standard questionnaire. Descriptive analysis was done by percentage. Non-parametric test was applied for comparing between controls and cases. **Results-** 35 Cases and 35 controls participated. Among cases 13 had chronic migraine without aura, 9 had chronic migraine with aura and 13 had chronic TTH. Mean QOL scores for migraine with aura was 116.6, followed by migraine with aura 117, then chronic TTH 119.6. The no headache group had the best QOL scores at 125.7. The difference in mean quality of life scores were not statistically significant within the case group. Overall prevalence of psychiatric comorbidities is more in headache group, 15 compared to no headache group, 7. In control group 8.6% had anxiety, 5.7% had depression, and 2.9% had history of substance use. In chronic migraine without aura, 30.8% had depression, 15.4% had anxiety, and 1(7.7%) had history of substance use. Among migraine with aura, 2 had depression, 1 had suicidality, 1 had history of mania, and 1 had anxiety. Among chronic TTH group, 1 had depression, 1 had anxiety and 1 had suicidality. **Conclusion-** Our study shows that those with chronic headache have more psychiatric illness and poorer quality of life compared to those without any headache.

KEYWORDS : Chronic Headache, Psychiatric Co-morbidities, Quality of Life

INTRODUCTION

Headache is common complaint. For some, it is frequent and characteristic enough to prompt a syndromal diagnosis.

All those headaches which occur with a minimum number of frequencies with a characteristic quality, and with no apparent causative factors are termed primary headaches. Primary headache are broadly classified into migraine, tension type headache (TTH), trigeminal autonomic cephalalgias and others.(2)

Secondary headaches are headaches which have a clear temporal association with a known causative factor and can be cured by targeting that particular factor.(2)

Migraine has a characteristic throbbing pain, which is often unilateral, moderate to severe in intensity, and aggravating on movement of head. It is associated with nausea/vomiting and photophobia and phonophobia. It has specific triggers which differ from individual to individual. TTH has a characteristic dull aching type of pain, is usually bilateral, mild to severe in intensity, sometimes extending to neck, without significant nausea / vomiting and photophobia / phonophobia. Trigeminal autonomic cephalalgias are a group of headaches which are lateralized to one side of the head and accompanied by parasympathetic symptoms limited to the head region. Imaging studies show ipsilateral activation of trigeminal parasympathetic reflex.(2)

Migraine and TTH are highly prevalent throughout the world. According to the Global Burden of Disease Study 2010, TTH is the second most prevalent disorder (20.7%) and migraine is the third most prevalent disorder (14.7%). –"(3)

Chronic headache, vaguely defined as headache lasting for $\geq$15 days per month, may lead to significant decline in quality of life (QOL) through missed school days and work days. Chronic headache decreases ones' opportunity to participate in recreational activities.

Studies have shown a bidirectional association between migraine and depression and anxiety.(4) The association between chronic migraine and psychiatric illness is even stronger. — (5) Familial co-occurrence and response to amitriptyline and sumatriptan may indicate the presence of a common etiology and not just a reaction to stress.
Current medical practice focuses on bringing the patient to maximum possible functioning. Evaluating the patient with chronic headache for psychiatric illness is commonly ignored. For that to be possible, we need to know about the various types of somatic illness associated with different mental illness. Our study aimed to decipher the relationship between chronic headache and various psychiatric comorbidities and to further determine the effect of chronic headache on psychiatric comorbidities and quality of life.

MATERIALS AND METHODS

The study was conducted in a Tertiary Care Hospital in Karnataka from November 2018 to April 2020. Convenient sampling was done for patients coming to the Out Patient

Department(OPD) of the Psychiatry and Medicine Departments was done. Patients having chronic primary headache, of either sex between 19 to 60 years were taken as cases. Individuals of either sex between 19 to 60 years accompanying the patients coming to OPD without any headache were taken as controls. Patients with other chronic medical illness (e.g. diabetes mellitus, hypertension), unable to provide answers due to severe illnesses, delirium and dementia, having secondary headache (e.g. medication overuse headache, headache due to infection) were excluded from the study. In total, 35 cases and 35 controls were evaluated. Institutional Ethical Committee approval was taken prior to the study and informed consent was taken from each participants.

Socio-demographic variables and clinical profile of participants were recorded. MINI is a brief structured diagnostic interview for screening major mental illnesses based on Diagnostic and Statistical Manual-V(DSM-5) and International Classification of Diseases-10(ICD-10). "(6) WHO-QOL BREF is a 26 item scale in 4 domains- physical, psychological, social relations, environment. Can be both self- rated and interviewer rated. It measures the perceived quality of life rather than the health status or wellbeing. Used in clinical trials and for monitoring changes in QOL with certain interventions. Higher scores mean better quality of life.(7)

After providing adequate explanations about the topic of research and obtaining voluntary informed consent, semi-structured proforma, MINI, and WHO-QOL BREF were administered by the principle Investigator.

Statistical analysis was done using Epi-Info version 7.2.2.6 and recorded in Microsoft Excel version 2013. Descriptive analysis was done by percentage and probability. After checking for normality, non- parametric tests were applied for comparing cases and controls. One way ANOVA was applied to measure significance of quality of life scores among no headache, migraine with aura, migraine without aura and TTH groups. All the psychiatric comorbidities were tested for measure of association using chi square test.

RESULTS

As seen in table 1, among 35 cases 13 had chronic migraine without aura, 9 had chronic migraine with aura and 13 had chronic TTH. Majority of them were females and majority were between 30-44 years.

Table 2 reveals, chronic migraine without aura had the least quality of life scores -116.6 followed by chronic migraine with aura -117 and chronic TTH -119.6. The results are significant ($p<0.001$).

Table 3 shows, two (5.7%) patients with no headache and four (30.8%) patients with migraine without aura had depression. Depression was significantly more in those with migraine without aura ($p=0.020$) showing strong correlation (phi-value 0.337). Three (8.6%) with no headache and two (15.4%) with migraine without aura had anxiety, but not statistically significant ($p=0.492$). One each from both the groups (2.9% in no headache and 7.7% in migraine without aura) had substance abuse ($p=0.456$). No one in these two groups had suicidality, mania, schizophrenia and/or Obsessive Compulsive Disorder (OCD).

Seen in table 4, three (7.7%) patients with no headache and two (22.2%) patients with migraine with aura had depression but this was not statistically significant ($p = 0.198$). One person (11.1%) with migraine with aura had suicidality and another had mania. Both were significantly more ($p = 0.03$), with Phi value of 0.304, showing very strong correlation. Depression was significantly more in those with migraine without aura ($p=0.020$) with Phi of 0.337 showing very strong correlation. Four (10.3%) with no headache and one (11.1%) with migraine with aura had anxiety, but this was not statistically significant ($p = 0.940$). One (2.6%) with no headache had substance use and this too was not significant ($p = 0.627$). None from these two groups had OCD and/or schizophrenia.

Table 5 shows two (5.7%) of the no headache group and one (7.7%) of those with TTH had depression but this was not statistically significant ($p = 0.801$). Three (8.6%) of those from no headache group and one (7.7%) with TTH had anxiety, but this too was not statistically significant ($p = 0.922$). One (2.9%) from no headache group and one (7.7%) from TTH group had substance abuse, again this was not significant ($p = 0.456$). None in these two groups had suicidality, schizophrenia, OCD and/or mania.

DISCUSSION

We compared quality of life and psychiatric comorbidities in those with chronic headache and those without headache.

The majority of the participants in our study were females. This correlates with the existing epidemiological studies.(1) Headache is more common in females, migraine is more common in females. Furthermore, chronic headache is seen more in females. In a South Indian study, the females suffered from chronic headache 5 times more than males. (1) Increased frequency of headache is reported in pregnancy, ovulation stage of menstrual cycle suggesting a role of estrogen in headache.————————(8) Majority of the participants were in the age group of 30-44 years which coincides with other studies and epidemiological data.————————(1,8) Frequency and prevalence of headache increases up to 45 years, falling in frequency after. No significant differences in our two groups as per the sociodemographic variables.

In our study the total duration of headache for majority of the participants was more than 10 years; indicating a period of episodic headaches before its development into chronicity. No set duration between onset of headache and its progress into chronicity has been found, but the factors which can lead to "chronification" of migraine are decreased sleep, analgesic overuse, presence of psychiatric comorbidities, and weight gain.(9)

Mean score of quality of life in chronic headache group was poor compared to control in our study. Continuing one's job and responsibilities with a continuous headache for more than 15 days in a month is therefore a burden. This is reflected in QOL evaluation of the patients. This dip in QOL is important but often not evaluated. Poor QOL in seen in previous studies too.

Sharma et al. evaluated the impact of chronic headache on QOL. They found that depression was about 20% and anxiety was about 30% in probable cases.(4) The rate of depression matches with our study but not the rate of anxiety. We found about 12% had anxiety. There are three reasons for this apparent difference. First, the difference can be loosely attributed to the headache characteristics of their sample. They found migraine with aura to be of about 25%. While we found similar rates of migraine with aura, we found about 38% of our sample to have migraine without aura. Presence of aura itself may cause anxiety, and often the aura includes panic-like features or increased anxiety. This could have led to finding of lower

anxiety rates. Second, Sharma et al. used Hospital Anxiety Depression Scale (HADS) and we used MINI. We have evaluated anxiety disorders, whereas Sharma et al. have evaluated symptoms of anxiety. Third, when anxiety is present along with depression, the classificatory systems suggest that the diagnosis of depression takes precedence.

A study by Risal et al. (from Nepal) reported that quality of life score was low in those with headache >15/month, followed by episodic migraine, followed by episodic TTH and the overall quality of life scores were lower if participants had depression and/or anxiety along with headache.— (5) Again, the assessments were by HADS. More importantly, the authors found through modified HADS for anxiety and depression that HADS-depression did not correlate significantly with headache type. Muscle tension, uneasiness, worries and palpitations often accompany chronic headaches and these are asked in scales and MINI as well. However, in the HADS, depression is assessed by questions related to anhedonia, motor slowing, and decrease in interest. Pervasive sadness, death wish with depressive cognitions are not asked, and so are not commonly reported. These symptoms are better evaluated by MINI. Thus, the previous studies have found more anxiety symptoms when evaluated by scales.

The overall prevalence of psychiatric comorbidities In our study was greater in those with chronic headache compared to those without headache. The prevalence of psychiatric comorbidities in chronic headache group was 42.8% compared to 17% in no headache group. Teixera et al. in a study on chronic headache reported prevalence of mental illness at 48%. (10) Anxiety is the most prevalent in our study (11.4%) similar to other studies; but the actual prevalence of anxiety among those with chronic headache is less than a study by Zebenholzar et al. which had prevalence of anxiety at 53.9%. —(11) Depression is the second most prevalent mental illness among those with headache as is the case in our study (20%) though it is lesser than a study by Zebenholzar et al. which had depression among 46.3% of those with chronic headache.

One with chronic migraine with aura had suicidality. A study by Breslau et al. reported increased prevalence of suicidal ideation and attempts in those with migraine with aura (OR-3). –(12) Friedman et al. in 2017 have systematically reviewed and meta-analysed suicidality and migraine. A modest positive association was noted.

One individual with migraine with aura had past history of mania. Kivilcim et al. reported comorbid bipolar disorder in those with migraine at 19%. ——(13) Ortiz et al. reported increased prevalence of bipolar I compared to bipolar II (34% vs 19%) .(14) Migraine may influence the course of bipolar illness by increasing depressive episodes. However, there may be hidden common aetiologies in white matter hyper-intensities and calcium channel dysfunction. Moreover, the pharmacological treatments of migraine are related to mood disorders.(15) One participant with chronic migraine without aura and chronic TTH each had history of substance abuse and one individual from no headache group had history of substance abuse. Association between substance abuse and chronic headache is unclear. Breslau et al. reported increased association between alcohol, illicit drugs and nicotine with migraine. –(12) Alcohol and other recreational drugs are considered as triggers for headache and therefore it could act as a deterrent for substance abuse.

The prevalence of depression in chronic TTH in our study is 7.7%, which is similar to another Asian study by Song et el. which had a prevalence of 7.15%. —(16) Anxiety among those with chronic TTH in our study was prevalent at 7.7% vs 8.6% in no headache group. Other studies have reported increased prevalence of anxiety in those with TTH more so with chronic TTH. Holroyd et al reported prevalence of anxiety in chronic TTH to 34.7%. —(17)

In our study overall psychiatric illness in migraine without aura was 53.8% and in migraine with aura it was 55.6%. There is conflicting evidence stating whether both are distinct disorders with different genetic etiology or are same disorder with different presentation. Ball et al. report them to be different forms of the same disorder, with migraine with aura occupying the more extreme end of the spectrum of liability.(18)

Our study has a few limitations such as cross-sectional nature of the study and low sample sizes. Thus conclusions about the direction of observed relationships may not be drawn. Statistically significant results also could not be obtained due to the small sample size.

Presence of psychiatric comorbidity with primary headache influences the choice of prophylactic medication. A single medication might treat both the conditions. Presence of psychiatric illnesses also necessitates avoidance of few medications. Beta blockers are known to precipitate depression and worsen the existing condition and therefore should be avoided in case of depression.(19) Use of tricyclic antidepressants might precipitate a manic switch. In case of comorbid depression amitriptyline has good efficacy as prophylactic and in case of comorbid bipolar disorder, sodium valproate is a good option.

Other than pharmaco-therapeutic options adjunctive therapies like biofeedback, autogenic training, cognitive behavioural therapy, yoga and other bio-behavioral strategies can also be used. Effectiveness of psychotherapies in mild depression and anxiety is extensively studied and established. Studies about effectiveness of biofeedback and CBT in management of chronic pain conditions are coming up."–(20,21) In patients with multiple conditions, the addition of these therapies may significantly improve medication adherence and outcome, reducing the number of drugs prescribed and thus give a sense of control over the illness to the patients.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

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