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Original Research Paper

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A GENDER BASED COMPARISON TO STUDY THE PSYCHIATRIC CO-MORBIDITIES OF MIGRAINE ON THE BASIS OF ITS SEVERITY.

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ABSTRACT **Background:** There is lack of data from india on the difference of presenting psychiatric comorbidities of migraineurs among male and female population. **Objectives:** the objective of the study were to quantify the impairment i.e disability due to migraine severity, associated depression and anxiety among male and female migraineurs of comparable characteristics. **Materials And Methods:** we interviewed 105 consecutive newly diagnosed migraine patients (both male and female) visiting headache clinic in a tertiary care centre between September 2019 to march 2020.Age and sex matched healthy subjects (n=105, later 5 dropped) were used. PHQ9, MIDAS, and GAD7 scales were administered. Predictors were analysed using regression analysis. **Result:** both male and female migraineurs have shown similar result with preponderance of anxiety disorder more in female than male migraineurs. Prevalence of clinically significant anxiety(48%) and depressive (41%) symptoms, higher among female than male. Female gender, headache related disability, and severity of anxiety and depressive symptoms predicted worse mental component summary scores. **Conclusion:** incidence of clinically significant anxiety and depressive symptoms is much higher among migraineurs and the severity was comparatively higher among female than male. These findings goes with studies from other parts of world and Indian prospects.

KEYWORDS : anxiety, depression, migraine, MIDAS,GAD7, PHQ9.

INTRODUCTION:

Headache is one of the commonest (70%) neurological disorder in the world.(1) It has an aggregated weighted average prevalence of definite migraine is 10.9 %, from international studies is very close to 10-12% in pre-ICHD 2 studies (2). Migraine has been placed 19th in World Health Organisation (WHO)´s list of diseases ranked by years lived with disability.(3) The global burden of migraine is still under recognized and under-treated. Migraine is a disorder characterized by recurrent attacks or episodes of headache accompanied by other neurologic and gastrointestinal disorders. Migraine is known to be associated with psychiatric co-morbidities, with reported prevalence of (20-40%) anxiety and (10-15%) for depression, bipolar affective disorder (5-10%) and suicidal ideation and attempts (<5%) cases.(4) The term co-morbidity is used to refer the statistical association of two distinct diseases in the same individual at a rate higher than expected by chance (5). Psychiatric disorders are frequently co-morbid with migraineurs, and result in a significant burden including depression, anxiety, bipolar affective disorders and suicide ideation and attempt (6). Presence of these co morbidities reduces the HRQoL (Health Related Quality of Life) of migraineurs independent of headache characteristics and headache related disability.(7) Study about the co-morbidities in migraine is of both diagnostic and economical significance as its co-occurrence can complicate diagnosis, its management and outcomes can also provide clues to the patho-physiology of migraine. Understanding the psychiatric correlates of migraine is very important for many reasons. For instance, depressive disorders are one of the leading cause of disability worldwide (8) and the WHO estimates that major depressive disorder (MDD) will become the second leading cause of disease burden, worldwide by the year 2020, second only to ischaemic heart disease.(9) Furthermore people with migraine and psychiatric co morbidities are greater health resource users than migraineurs without psychiatric co morbidities.

Although various psychiatric conditions have been studied in migraine patients, this is one of the few comprehensive studies done to study the role of gender in studying the level and severity of depression and anxiety among migraine patients visiting psychiatric OPD in a tertiary care centre in Jharkhand state. This study is also important for several other reasons:

- It uses fully structured, validated rating scales viz. GAD- 7 (Generalized anxiety disorder -7)and PHQ- 9 (Patient health questionnaire -9). (10-11)
- To assess the severity of migraine, after the diagnostic confirmation done using ICHD-2, was done using MIDAS.(12)

The primary objectives of this study were to-

- The gender based difference in the severity of anxiety and depression in migraine patients of comparable parameters.
- Describes the pattern of association of this comorbidity with different severities of migraine.

MATERIALS AND METHODS

ETHICS-

Ethical clearance from the instituitional ethical committee at The Patliputra Medical college, Dhanbad, Jharkhand was obtained.

PATIENT POPULATION-

Consecutive male and female patient aged between 18-60 years,attending the headache clinic of a tertiary care centre were studied between September 2019 and march 2020.Patients were diagnosed with migraine(with or without aura) according to the International classification of headache disorders-2nd edition(ICHD-2) by the same clinician, Subjects with duration of headache at least of 3 month s and the age of onset less than 50yrs with no prior history of migraine prophylactic medications were included in the study. Exclusion criteria were recent history of antipsychotic, antidepressant, antianxiety medications in the last 3months, or past alcohol or recreational drug abuse.

INSTRUMENTS-

After obtaining informed consents from the subjects following study instruments were administered by the authors.

A) Migraine Proforma-

Diagnosis of migraine was confirmed with an interview tool developed at Patliputra Medical College that uses ICHD-2 criteria. Questions on various headache characteristics including duration of symptoms, presence and type of aura, precipitating factors, localization and frequency of headache were recorded on the questionnaire based on clinical history.

B)Migraine Disability Assessment Scale-(MIDAS)-

this is a validated headache specific tool that assesses the degree of migraine related disability. It captures information on lost time from work for pay, housework or chores, and leisure activities. The MIDAS sore is simply a sum of numbers of lost days in these 3 domains.

c) Patient health questionnaire-9 (PHQ-9 patient depression questionnaire) :

It is one of the most validated self report measure for psychiatric screening of headache sufferers as it has already been validated for medical patients. Although a number of different measures are likely appropriate to use in screening for psychopathology, the most common and most validated measure of depression among migraine sufferers is the nine item depression module of PHQ-9; (PHQ-9;Kroenke, Spitzer, &William,2001). The questionnaire included 9 items which was answered along a four point Likert scale (0= not at all, 1= several days, 2= more than half the days, 3 = nearly everyday), with total scores ranges from 0 to 27, for the last 2weeks.Since the questionnaire relies on the patient self report, all responses were verified by the clinician and a definitive diagnosis was made on clinical grounds taking into account how well the patient understood the questionnaire, as well as other relevant information from the patient. The APA has also provided a system for interpreting different PHQ-9 scores range in terms of severity : None = 0 to 4; Mild depression =5 to 9; Moderate depression =10 to 14; Moderately severe depression = 15 to 19; and Severe depression =20 to 27.

d) Generalised anxiety disorder-7 (GAD-7): It is a validated 7 items, self-administered questionnaire which enquire about general worry and fear symptoms in last 2weeks. It is rated along a four point Likert scale (0= not at all, 1= several days, 2= more than half the days, 3= nearly everyday). For anxiety symptomatology, the generalized anxiety disorder seven- item scale is used frequently (7). Scores range from 0 to 21 (where higher score indicate greater levels of pathology), and cut of 5, 10, and 15 have been suggested for mild, moderate and severe GAD, respectively.

STATISTICAL ANALYSIS

Statistical analysis was done using SPSS version 21 for windows. Score comparision between male and female patients was done by students t-test.Multiple linear regression analysis were used to identify the association between severity of migraine and levels of anxiety and depression in male and female migraineurs. These variables included :headache related disability(MIDAS score),severity of anxiety(GAD-7),level of depression(PHQ-9).Significance was assumed at a value of p(<0.05).

RESULT:

Out of 105 subjects in total with 51 males and 54 females the study was done, but 5 patients declined and finally each group, 50 (50%) were males and 50 (50%) were females. There was no statistical difference in the age distribution of patients (MALE: mean 30.5yrs, SD = 8.2, range 18-60yrs; FEMALE: mean 30.1yrs, SD = 8.3, range 18-60yrs) due to frequency matching employed in the study.

Table1&2 shows the distribution of disability levels due to migraine severity on the basis of MIDAS scores among both gender migraineurs. It shows that higher level of disability was reported among female than the male migraineurs, through the difference was very meagre. There was no significant gender difference in mild to moderate disability. Table 3 represents depression of moderate severity was reported more among female migraineurs, and there was no such gender difference reported in mild and severe levels of severity of depression.

Table 4 represents anxiety of severe grade(p=) was reported more among female migraineurs than males.; also the level of minimal anxiety was significantly higher among male, rest others were insignificant.

Table-1: Shows Distribution Of Disability Due To Migraine Severity On The Basis Of MIDAS In Male And Female Patients, (n=100; male= 50, female=50)

Gender	Migraine disability	Frequency (μ)	Percentage (%)	p value (p)
Male	Little or no disability	11	22	0.247
	Mild disability	21	42	0.313
	Moderate disability	14	28	0.045
	Severe disability	04	08	0.254
	total	n = 50		
Female	Little or no disability	13	26	0.263
	Mild disability	18	36	0.244
	Moderate disability	13	26	0.263
	Severe disability	06	12	0.365
	total	n = 50		

Table-2:shows difference in disability levels between both genders, male and female migraine patient(n=100)

Gender_ of patient	Levels of disability due to migraine severity				P value (p)
	little or no disability	mild disability	moderate disability	severe disability	
Male	11	21	14	4	0.821
Female	13	18	13	6	0.834

Table 3 Shows The Distribution Of Depression As Per PHQ-9 PDQ Among Male And Female Migraine Patient (n=100)

Gender	Severity of depression	Frequency (μ)	Percentage (%)
Male	Minimal depression	8	16.0
	mild depression	12	24.0
	moderate depression	12	24.0
	Moderately severe depression	16	32.0
	Severe depression	02	4.0
Total	n=50		
Female	Minimal depression	04	8.0
	mild depression	12	24.0
	moderate depression	20	40.0
	Moderately severe depression	12	24.0
	Severe depression	02	4.0
Total	n=50		

Table 4 Shows Distribution Of Anxiety On The Basis Of GAD-7 Among Male And Female Migraine Patients (n= 100).

Gender	Level of anxiety	Frequency (μ)	Percentage (%)	P value (p)
Male	Minimal anxiety	13	26	0.202
	Mild anxiety	16	32	0.330
	Moderate anxiety	15	30	0.136
	Severe anxiety	06	12	0.816
	Total(n)	50		
Female	Minimal anxiety	03	06	0.312
	Mild anxiety	17	34	0.221
	Moderate anxiety	21	42	0.337
	Severe anxiety	09	18	0.104
	Total(n)	50		

DISCUSSION:

The study demonstrates a pervasive impairment in most of the migraine patients, with no significant difference as per gender. There was higher incidence of depression and anxiety among female migrineurs than male. Also the severity of psychiatric comorbidities was found somewhat greater

among male. The limitation which was encountered was about exact duration of illness which was reported in 85% of cases from both genders. As per a study by Fonaro and Leo R.J (16) migraine also had a remarkable association in female with BPD in study. As per another study by Rikinkumar S.Patel et al (17), there exists a higher percentage of co-occurance of migraine and bipolar disorder, predominantly in subjects with a confirmed family history of BPD , suicidal attemptsand childhood physical abuse. Migraine is more prevalent in women (15-20%) than male (6%) and though BD has no gender different course of illness or presentation of BD. Women with BD are at higher risk for BPD-II, comorbid anxiety disorder and suicide attempts (18). Gender differences emerged in clinical correlates of migraine including that men with migraine reported more mixed symptoms than men without migraine. So, our study was consistent with the previous with some negligible difference in severity, which can be further studied in bigger samples, in order to conclude new results in future also the study can be conducted in multicentric levels to rule regional variation if any or any confounding factors responsible.

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