International Journal of Science and Research (IJSR)
ISSN: 2319-7064
ResearchGate Impact Factor (2018): 0.28 | SJIF (2018): 7.426

Anxiety and Depression in Migraine Patients and Associated Risk Factors: A Cross - Sectional Study

Islam El Malky[1], Mohamed Moslem Hefny Mahmoud[2]

[1]MD Neurology, South Valley University, Department of Neurology, Qena, Egypt

[2]MD Psychiatry, South Valley University, Department of Neurology, Qena, Egypt

Corresponding Author Email: *islam. elmalky[at]yahoo.com*
Phone: +2 01005085507
ORCID: 0000-0002-3092-2159

Abstract: ***Introduction: Anxiety and depression are known to be comorbid with migraineurs in multiple studies. One study reported 8.6%−47.9% % prevalence of depression in migraine patients. The treatment of the comorbid anxiety and depression might have a good effect on the success in migraine treatment. Our study aims to find the prevalence of anxiety and depression in migraine patients and the possible predictors of this comorbidity. Methods: Patients with migraine diagnosis according to the international Classification of Headache Disorder 3 beta criteria were collected from the outpatient clinic of neurology. Clinical data, HADS (Hospital Anxiety and Depression Scale) and MIDAS Questionnaire (Migraine Disability Assessment test) were obtained from these patients. Results: The study population contained 118 patients, 108 patients (91.5 %) were female. The median of patients age was 32, range from 18 to 62 years. Rate of anxiety in this population was 44 patients (37%). After multivariate logistic regression, years of migraine complain and presence of aura were predictors of anxiety in migraine patients with p value 0.009 and 0.04, respectively and Odds ratio 1.108 [CI: 1.026-1.196] and 3.2 [CI: 9.71-1.05], respectively. Rate of depression was 37 patients (31.4 %). MDA score was the only variable, statistically significant with p-value 0.005. Conclusion: Anxiety and depression were obvious and with high-rate prevalence in our study group. Prolonged duration of migraine complain and migraine severity were predictors of anxiety and depression, respectively.***

Keywords: Anxiety, depression, migraine

1. Introduction

Migraine is one of the most common neurological disorders in any outpatient clinic of Neurology. Anxiety and depression are known to be comorbid with migraineurs in multiple studies. One study reported 8.6%−47.9% % prevalence of depression in migraine patients (1). A meta-analysis reported that migraineurs have anxiety 4-5 times than other population (2). The treatment of the comorbid anxiety and depression might have a good effect on the success in migraine treatment. Our study aims to find the prevalence of anxiety and depression in migraine patients and the possible predictors of this comorbidity.

2. Methods

The patients were collected from Neurology outpatient's clinic of headache. The study was carried out following local and federal regulations and Helsinki Declaration. Written Consent from patients or their relatives to participate in this study. HAD and migraine disability scales were applied to all patients of migraine from October 2018 to October 2019. Included patients were diagnosed migraine by the international Classification of Headache Disorder 3beta criteria. Multiple clinical variables were collected such as age, sex, marital status, body mass index, duration of migraine by years, frequency of attacks per month. Disability of migraine was assessed by Migraine Disability Assessment test (MIDAS Questionnaire) which is a questionnaire, measuring the effect of migraine on the daily life of the patients (3). A score of ≥ 6 is considered positive. Mild degree was considered if the score from 6 to10, moderate scale if the score from 11 to 20, and sever score if scale more than 20. Neuro-imaging such as MRI or CT brain was done to exclude structural lesions. Age of the patients was from 18-50 years. The comorbidity with anxiety or depression was assessed by the Hospital Anxiety and Depression Scale (HADS) (4). It consisted from two subscales, one foe anxiety and the other for depression. Each subscale formed of seven items. Each item is rated 0-3. The sum of these items in each subscale was considered positive if it was ≥ 11.

Exclusion criteria included patients with mixed types of headaches, sever medical or psychiatric diseases, with recent use of contraceptives, patients on prophylactic migraine treatment and recent onset headache less than one year.

Statistical Analysis

The collected data were statistically analyzed by software (IBM SPSS Statistics, version 22.0). We used medians and IQR (Interquartile Range) for continuous variables, not normally distributed while mean and SD (stander deviation) for normally distributed continuous variables. Frequencies or proportions were used for categorical variables. Multiple procedural and clinical parameters were analyzed as possible risk factors for efficacy and safety outcome, using Fischer exact test for categorical variables, Mann–Whitney U test and student t-test for not normally and normally distributed continuous variables respectively.

3. Results

The study population contained 118 patients, 108 patients (91.5 %) were female. The median of patients age was 32, range from 18 to 62 years. Twenty patients (16.9%) had positive family history of migraine. High body mass index

≥25 Kg/m2 was presented in 86 patients (72.9 %). Twenty patients were presented with migraine with aura (16.9%). Sever disability was reported in 68 patients (57.6 %).

Rate of anxiety in this population was44 patients (37%). Table 1 reported the multiple variables, could be in relation with the anxiety. Sex, presence of aura and duration of complain migraine by years were statistically significant with p value 0.013, 0.040 and 0.011 respectively. After multivariate logistic regression, years of migraine complain and presence of aura were predictors of anxiety in migraine patients with p value 0.009 and 0.04, respectively and Odds ratio 1.108 [CI: 1.026-1.196] and 3.2 [CI: 9.71-1.05], respectively.

Rate of depression was 37 patients (31.4 %). Table 2 reported the multiple variables, could be in relation with the depression. MDA score was the only variable, statistically significant with p-value 0.005.

Table 1: Variables in association with anxiety

The variable	P value	test
Sex	0.013*	Fischer Exact
Family History	0.214	Fischer Exact
Presence of aura	0.040*	Fischer Exact
age	0.212	Mann whitney U
Duration of migraine complain by years	0.011*	Mann whitney U
BMI	0.522	Student T-test
Number of attacks	0.706	Student T-test
Duration of one attack	0.902	Student T-test
MDS score	0.543	Student T-test

Table 2: Variable in association with depression

The variable	P value	test
Sex	0.168	Fischer Exact
Family History	0.431	Fischer Exact
Presence of aura	0.561	Fischer Exact
age	0.745	Mann whitney U
MDS score	0.005*	Mann whitney U
Duration of migraine complain by years	0.071	Student T-test
BMI	0.631	Student T-test
Number of attacks	0.386	Student T-test
Duration of one attack	0.672	Student T-test

4. Discussion

The relation between migraine and both depression and anxiety had been confirmed in many researches (5). The prevalence of anxiety and depression was 37%and 31.4% respectively in our study, similar to other studies (2). Other studies reported less prevalence than our study (1, 6). in the Eurolight project, anxiety and depression were19, 7 % respectively which is less than our results. The Eurolight project is a cross-sectional survey, included ten European countries. This might be due to different populations, different included criteria, type of headache and usage of different scales. Many studies reported that anxiety is more common than depression between migraineurs and that was approved in our study (37% against 31.4%) (8). Many authors reported that anxiety occurrence might even precedes migraine by many years (1). This might be explained by that prevalence of anxiety is more than depression in general population (8).

The relation between migraine and anxiety or depression cannot be identified if it is uni or bidirectional. A population-based study from America reported that patients with chronic migraine had more anxiety and depression in comparison to general population (9), while Ashina et al reported that patients with moderate or severe depression were more liable to have chronic migraine, in the American Migraine Prevalence and Prevention study (10). In our study, the only predictor of depression was high migraine disability score which in concordance with Buse DC et al (9). Other studies reported the bidirectional relationship; it means presence of one disease will lead to progression of the other disease (11, 12). This explains the importance of treatment of comorbidities with migraine (anxiety and depression) to get good results.

We found out that increased duration of migraine complains and presence of aura has a relation with the occurrence of anxiety which could be explained by what Baldacci et al reported. They postulated that migraine chronicity (by long duration or increased severity score) leads to hyperexcitability of cortex with dysregulation of sympatho-adrenomedullary and serotonergic system which is a common pathway for anxiety and depression (13). Maizels M, et al reported the neuro-limbic module of migraine which binds both migraine and anxiety/depression pathways (14). This binding results from altered functional connectivity between brain stem centers and limbic system. In addition to that, many neuroimaging studies reported common anatomical sites of activation between migraine and anxiety/depression such as periaqueductal gray, amygdala, anterior cingulate and rostroventral medulla (15).

5. Conclusion

Anxiety and depression were obvious and with high-rate prevalence in our study group. Prolonged duration of migraine complain and migraine severity were predictors of anxiety and depression, respectively.

References

[1] Antonaci F, Nappi G, Galli F, Manzoni GC, Calabresi P, Costa A, et al. Migraine and psychiatric comorbidity: A review of clinicalfindings. J Headache Pain 2011; 12: 115-25.
[2] Breslau N. Psychiatric comorbidity in migraine. Cephalalgia1998; 18 Suppl 22: 56-8.
[3] Stewart WF, Lipton RB, Dowson AJ, Sawyer J. Developmentand testing of the migraine disability assessment (MIDAS) questionnaire to assess headache-related disability. Neurology2001; 56: S20-8.
[4] Zigmond AS, Snaith RP. The hospital anxiety and depressionscale. Acta PsychiatrScand 1983; 67: 361-70.
[5] Louter MA, Pijpers JA, Wardenaar KJ, van Zwet EW, van Hemert AM, Zitman FG et al (2015) Symptom dimensions of affective disorders in migraine patients. J Psychosom Res 79 (5): 458–63
[6] Wacogne C, Lacoste JP, Guillibert E, Hugues FC, Le Jeunne C. Stress, anxiety, depression and migraine. Cephalalgia 2003; 23: 451-5.

[7] Baldacci F, Lucchesi C, Cafalli M, Poletti M, Ulivi M, Vedovello M, et al. Migraine features in migraineurs with and without anxiety-depression symptoms: A hospital-based study. Clin Neurol Neurosurg 2015; 132: 74-8
[8] Kessler RC, Chiu WT, Demler O, Merikangas KR, Walters EE. Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. Arch Gen Psychiatry.2005 Jun; 62 (6): 617-27.
[9] Buse DC, Manack A, Serrano D, Turkel C, Lipton RB. Sociodemographic and comorbidity profiles of chronic migraine and episodic migraine sufferers. J Neurol Neurosurg Psychiatry 2010; 81: 428-32.
[10] Ashina S, Serrano D, Lipton RB, Maizels M, Manack AN, Turkel CC, et al. Depression and risk of transformation of episodic to chronic migraine. J Headache Pain 2012; 13: 615-24.
[11] Breslau N, Lipton RB, Stewart WF, Schultz LR, Welch KM. Comorbidity of migraine and depression: Investigating potential etiology and prognosis. Neurology 2003; 60: 1308-12.
[12] Bigal ME, Lipton RB. Clinical course in migraine: Conceptualizing migraine transformation. Neurology 2008; 71: 848-55.
[13] Baldacci F, Lucchesi C, Cafalli M, Poletti M, Ulivi M, Vedovello M, et al. Migraine features in migraineurs with and without anxiety-depression symptoms: A hospital-based study. Clin Neurol Neurosurg 2015; 132: 74-8
[14] Maizels M, Aurora S, Heinricher M. Beyond neurovascular: Migraine as a dysfunctional neurolimbic pain network. Headache 2012; 52: 1553-65.
[15] Lakhan SE, Avramut M, Tepper SJ. Structural and functional neuroimaging in migraine: Insights from 3 decades of research. Headache 2013; 53: 46-66.