

MIGRAINE: COMORBIDITY WITH DEPRESSION

Naila Shehbaz¹, Shaukat Ali², Syed Wasim Akhtar³, Hasan Aziz⁴

ABSTRACT

Objectives: To identify and see impact of coexisting depression in diagnosed cases of migraine.

Design: Hospital-based case-control study.

Setting: Department of Neurology, Jinnah Postgraduate Medical Centre Karachi.

Patients and Methods: Patients of all ages and both sexes attending neurology OPD at JPMC between October 1998 to October 1999 were included. International Headache Society criteria for diagnosis of migraine and Urdu version of Hospital Anxiety and Depression Scale for diagnosis of depression was used. Migraine with Depression cases (MWD) were compared with Migraine without depression as controls (MC).

Main-Outcome-Measures: Duration and frequency of migraine, co-morbidity with depression.

Results: Out of 100 migraineurs, 40 were MWD and 40 MC were taken from the remaining 60 migraineurs. Among MWD and MC females were common: 72%(29) and 78%(31) respectively. Of the females MWD, most of the patients belonged to the age group 31-40years; 52%(15) patients, compared to MC where age group 21-30 years; 58%(18) was common. Among the males, maximum number of migraineurs belonged to the age groups of 22-30 years for both MWD and MC i.e. 46%(05) and 56%(05) respectively. Fifty percent of MWD reported having migraine attacks for 10 or more years, whereas only 18% of MC had the similar duration. (P-value = <0.01). Ninety percent (n=36) of MWD reported maximal disability during the headache as compared to the 62.5%(25) of MC. 62.5%(25) of MWD had an average frequency of 4 or more attacks per month compare to 55%(22) of MC having once per month or less. (P-value = 0.001).

Conclusions: Migraineurs with long history and high frequency might benefit from psychiatric evaluation and addition of antidepressant drugs to their therapeutic regimen.

KEY WORDS: Migraine, Comorbidity, Depression.

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1. Dr. Naila Shehbaz, FCPS
Department of Neurology,
Civil Hospital Karachi,
Karachi - Pakistan.
 2. Dr. Shaukat Ali, FCPS
 3. Dr. S. Wasim Akhtar, FCPS
Department of Neurology,
Baqai Medical University,
Karachi - Pakistan.
 4. Dr. Hasan Aziz, FRCP
- 2&4: Department of Neurology,
Jinnah Postgraduate Medical Centre,
Karachi - Pakistan.

Correspondence:

Dr. Naila Shehbaz
Department of Neurology,
Civil Hospital Karachi - Pakistan.
Email: nailashahbaz@hotmail.com

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INTRODUCTION

Migraine is a common neurological disorder, affecting 18% of females and 6% of males.¹ It imposes a high socio-economic burden on a society and compromises the quality of life in migraineurs. Major depression and migraine usually begin in early life. Depression is four times more common in migraine than in general population or in subjects with other chronic medical conditions.^{2,3} A previous study conducted at the same setting found that more than 10% of the study patients had depressive personality, which was highest of all the other personality types noted.⁴

A psychiatric disorder coexisting with a physical illness is likely to cause more distress by the symptoms of the illnesses, a poor response to treatment and, frequently unneces-

sary investigations and referral. The knowledge of the co-morbidity of migraine and depression and treatment of both conditions improves the burden of migraine socially and economically. The goal of the present study was to identify the coexisting depression in diagnosed cases of migraine and to see its impact on the headache disorder.

PATIENTS AND METHODS

For the diagnosis of migraine a questionnaire was developed based on the International Headache Society (IHS) criteria for the diagnosis of migraine.⁵ For the diagnosis of depression Urdu version (validated for the Pakistani population) of Hospital Anxiety and Depression Scale was employed.⁶ This scale was specifically designed for use in non-psychiatric hospital departments for patients with physical illness. The HADS comprises an anxiety and a depression subscale; each subscale consists of 7 items and each item has a 4 choice response format. The score of 7 or less showed non-cases, scores of 8-10 indicated borderline or doubtful cases, and scores of 11 or more determined definite cases. The scores on the two subscales can also be used as indications of the severity of depression and anxiety.⁶

This was a hospital-based case-controlled study carried out in the Department of Neurology, Jinnah Postgraduate Medical Centre (JPMC), Karachi, between October 1998 and October 1999. Out of all the patients attending the Neurology OPD of JPMC, 100 patients were found to have migraine according to IHS criteria for the diagnosis of migraine. The patients attending the JPMC OPD generally belong to very low socio-economic class. Investigations would have been an additional burden to their financial setback. Therefore, only those patients were selected for the study that had not found any change in the character or location of the headache. However, in doubtful cases organic lesion was excluded with CT Scan/MRI.

The patients who fitted the IHS criteria for migraine were then given the Urdu version of HADS. They were first asked to read the

questions and to understand them. Any doubts, if found were removed, and clear instructions were given regarding the method of answering the questionnaire. Most of the patients filled the proforma themselves, except for a few patients who were unable to do so on account of not being literate in true sense of meanings. The migraine patients having score of <7 were selected as controls (MC), and those having >10 were taken as cases of migraine with definite depression (MWD). Patients having borderline scores i.e., from 8-10 were not included in the study. In this way 40 cases of MWD were selected, who were then compared with 40 age and sex matched MC. Both MWD and MC were divided into three age groups: 11-20 years; 21-30 years and 31-40 years.

Duration of headache was also divided into three groups: those having headache for 5 years or less; those having it for 6 to 9 years; and those having it for 10 years or more. A maximal disability during the migraine attack was taken as "total confinement to bed" and "inability to move the head" to put into patients' words. A moderate disability was taken as inability to carry out routine physical activities. Regarding frequency of headaches, patients were arranged in three groups: 4 or more attacks per month, 2-3 attacks per months, and one attack per month or less.

RESULTS

Out of 100 patients of migraine, 40 were MWD on the basis of HADS. These were then compared with 40 age and sex matched Migraine Controls (MC). Among 40 cases of MWD, 72%(29) were females, and 28%(11) were males. Corresponding numbers for MC were 78%(31) and 22%(09) respectively. These patients belonged to an age range of 16 years to 40 years. Of the females MWD, 52%(15) belonged to the age group 31-40 years followed by 31%(09); 21-30 years and 17%(05); 11-20years. Relative numbers for MC were 58%(18); 21-30 years, 29%(09); 11-20 years and 13%(04); 31-40 years.

Among the males, the majority belonged to the age group of 22-30 years for both MWD

and MC: 46%(05) and 56%(05) respectively. The second age group for MWD was 34%(04); 31-40 years, followed by 18%(02); 11-20 years. Of MC, the respective figures were 33%(03); 11-20 years and 11%(01); 31-40 years. As regard duration of headache, 50% of MWD had these attacks for 10 or more years compared to 18% of MC (P-value = <0.01). About 15%(6) of MWD had headache duration of 5 or less years, indicating early onset of depression in these migraineurs.

Ninety percent (n=36) of MWD reported maximal disability during the headache as compared to the 62.5%(25) of MC. Only 10%(4) of MWD said that they had moderate disability during the attack whereas 37.5%(15) of MC had this much disability (P-value < 0.05). Majority of MWD, 62.5%(25), had an average frequency of 4 or more attacks per month, followed by 25%(10); 2-3 attacks, and only 12.5%(5); one attack per month or less. Among MC, 55%(22) had one attack per month or less; 37%(15); 2-3 attacks and only 7.5%(03); 4 or more attacks per month (P-value = 0.001).

Out of initially selected 100 patients, 67 fitted the criteria for migraine without aura, 24 had migraine with aura, and 9 patients had mix patterns of migraine variants. Of these 7 patients had co-existing migraine with aura and without aura; one patient had migraine without aura with ophthalmoplegic migraine (sixth cranial nerve palsy); and one had migraine without aura with occasional attacks of migraine with aura and aura without headache. Of these patients 75% of patients had unilateral headache, which changed sides. Nearly 75% percent of patients could identify a trigger for their attacks and 90% of them cited stress as a cause. Approximately 38% of the patients had a positive family history, usually for recurrent headaches.

Among MWD, score on the depression subscale of HADS was slightly higher for females than males. The average HADS score for females and males was 15.2 and 14.5 respectively, giving an average of 15±1 for MWD cases. For MC, the average depression score was 6±1, with negligible variation for females and males.

The age group, which showed maximum depression according to these scores, was 30-40 years group having an average score of 16, both for males and females. Age group of 20-30 years had a score of 14 for females and 13.5 for males. Age group of 10-20 years showed an average of 13 for females and 14 for males. This indicates a more severe degree of depression among adolescent male migraineurs of the study.

DISCUSSION

Migraine with depression was observed in 40% of the study patients, selected on the basis of IHS criteria for migraine and HADS for depression. Working with the same depression scale, Juang et al found the frequency of depression disorders to be about 57% in their headache patients.⁷ and Devlen in 20% of his migraine patients.⁸ In a population-based case-control study, Lipton et al determined that 47% of migraine sufferers experienced depression, compared to 17% of people without migraine.⁹ Sial found the evidence of depression to be about 52% in his study patients and cites psychological factors to be the main provokers of acute migraine attacks.¹⁰

It was noted that MWD had a more prolonged history of the recurrent headaches. Fifty percent of MWD had these attacks for 10 or more years compared to 18% of MC. Moreover, the headaches in MWD were of more severe intensity, more prolonged duration, and a greater frequency than in MC. Majority of MWD, 62.5%(25), had an average frequency of 4 or more attacks per month in contrast to 7.5%(03) in MC. Only 12.5%(05) of MWD had one attack per month or less compared to 55%(22) among MC. Other workers do not find any significant association of attack frequency and comorbidity of depression and migraine.¹¹ However, these results correlate well with the work of Saleem who found migraine frequency to be 1-2 attacks per month in 50% of his patients and more than 5 attacks in 15%, where he did not mention but probably was talking of migraineurs with depression.¹²

Ninety percent of MWD were severely disabled by their headache attacks compared to the 62% of MC having this much disability. Approximately similar results were given by Sial who found that 80% of his study patients could not continue their routine during migraine attacks.¹⁰ Depression was found to be more frequent in the fourth decade of life, which is the period of maximum productivity in terms of economy. Agony of the recurrent headache disorder, made worse by the coexisting depression, not only adds to the general suffering of the patient of a chronic condition, but also results in an increase in their social and economic handicap. This observation was supported by Hu, who reported that patients of both sexes aged 30 to 49 years incurred higher indirect costs compared with younger or older employed patients. Migraine costs American employers about \$13 billion a year because of missed workdays and impaired work function. Annual direct medical costs for migraine care were about \$1 billion and about \$100 was spent per diagnosed patients.¹³ Sial reported up to 50 or more lost work days per year; three of his study patients even lost their jobs.¹⁰

Thirty eight percent of our study patients had first-degree relative affected by recurrent headaches including migraine. Nasrullah enlightened this fact that there may be a history of other vascular headaches in family of migraine sufferers; like cluster headache.¹⁴ Mortimer found that a history of maternal depression and migraine was significantly more common and proportionately higher in children with abdominal migraine and recurrent abdominal pain.¹⁵

Nearly 75% percent of our patients could identify a trigger for their attacks and 90% of them cited stress as a cause, in combination with other factors or alone. This was quite high as compared to the percentages for stress or anxiety to be a trigger given by Robbins, 62%; this study was however not looking specifically for depression in their migraine patients, the presence of which might indicate an increase proneness to other psychological factors, including susceptibility to stress.¹⁶

MWD were found to be responding very slowly or poorly to anti-migraine treatment unless an anti-depressant was added to their therapeutic regimen. They become habitual of using analgesics, which in turn is another established cause of headache, the so-called analgesic rebound headaches,^{17,18} and also of hemicrania continua.¹⁹ Vasconcellos in his 98 pediatric and adolescent patients discovered rebound headaches in 47% with 30 of them using analgesic daily.²⁰ Rapoport on the other hand reports analgesic rebound headaches most likely to occur in patients aged 31 to 40 years.¹⁸ Moreover, there is typically delayed improvement in analgesic rebound headache after the offending agents have been discontinued; at times, it might be necessary to omit medications for 6 months until the almost daily headaches cease.²¹ This is quite a difficult job requiring patient understanding and education. In addition resistant headaches give way to various misconceptions about headache in a poorly educated society, where sources of misinformation outnumber markedly the sources of information. People then resort to various non-medical and non-ethical and even inhumanly treatments provided readily by quacks, false hakeems, faquirs etc. These situations are not a psychological trauma for the patient alone but also for the family members who keep on hanging in the realm of uncertainty. It should not be forgotten that migraine could even lead to suicidal tendency and suicidal attempts.²²

Limitation of the study: Figures in the study should not be extrapolated for general population, as this is a hospital-based study with obvious selection bias.

CONCLUSION

Depression, when it is comorbid with the migraine, not only increase the duration, frequency and severity of this primary headache disorder but also makes it more resistant to treatment. It also produces a deeper impact in impairing the quality of life for the affected person and overall increasing the burden of the

disease. Migraineurs with long history and high frequency of headaches or patients suffering from migraine with drug-overuse might benefit from psychiatric evaluation and probably addition of antidepressant drugs to their therapeutic regimen.

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