

Severity of Migraine with or without comorbidities: A Comparative Study

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Abstract

Background: Migraine causes difficulties in daily life. **Objective:** The purpose of this present study was to assess the severity of migraine associated with comorbidities. **Methodology:** This cross sectional study was carried out in Headache Clinic and Neurology outdoor in the Department of Neurology at Dhaka Medical College and Hospital (DMCH), Dhaka during the period of July 2010 to June 2011 for a period of one (01) year. All the patients presented with migraine were included as study population who were divided into two groups. Migraine patients without comorbidities were designated as group I and with comorbidities were in group II. The comorbidities were assessed which were both physical as well as psychiatric. The severity of migraine was assessed on the basis of four principal components like pain intensity, nausea, disability and tolerability. **Result:** A total of 70 patients with migraine were recruited of which 37 patients were in group I and 33 patients were in group II. In group II major depressive disorder was in 8(24.3%) cases, generalized anxiety disorder was in 6(18.1%) cases and hypertensive was in 7(21.2%) cases. Among 8 major depressive disorder patients, mild, moderate and severe migraines were found in 1(3.03%) cases, 2(6.06%) cases and 5(15.15%) cases respectively. Out of 6 GAD patients, mild, moderate and severe migraine were found in 1(3.03%) case, 1(3.03%) case and 4(12.12%) cases. Seven patients were hypertensive of which 1(3.03) patient had mild, 2(6.06%) had moderate and 4(12.12%) had severe migraine. Mild migraine was found in 18(48.6%) patients in group I and 6(18.2%) patients in group II. Moderate migraine was found in 12(32.5%) patients and 8(24.2%) in group I and group II respectively. Severe migraine was found in 7(18.9%) patients in group I and 19(57.6%) patients in group II. **Conclusion:** Severity of migraine is associated with different physical and psychiatric comorbidities. [Journal of National Institute of Neurosciences Bangladesh, 2015;1(2): 33-36]

Keywords: Migraine; Severity; Comorbidities; MIGSEV

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Introduction

Migraine is a highly prevalent and largely familial disorder characterized by episodic headache¹. It is now

ranked as number 19 among all diseases world-wide causing disability². Most commonly, the initial attack occurs during adolescence, and by 40 years of age, 90%

of those with the condition have had their first attack. After puberty it is more common in female. A family history of migraine is present in up to 90% of patients. Once migraine has developed, it tends to recur with varying frequency through-out much of a patient's life. Attacks have a tendency to get milder and occur less often in later years although this certainly is not a universal finding³. Several large population-based studies in Europe and the United States have shown the prevalence of migraine to be approximately 18% in women and approximately 6% in men⁴. Comorbidities in migraine patients are not uncommon. Episodic migraine patients are suffered from anxiety, depression, high blood pressure and obesity⁵. Current epidemiologic studies have found the associations between migraine and psychiatric disorder, primarily major depression and anxiety disorder⁶⁻⁷.

World-wide many studies have been performed to find out the common comorbidities of migraine patients⁸. For a significant proportion of migraine sufferers who seek help for their headaches, diagnosis can be complicated by other conditions that occur simultaneously with migraine. These overlaps have important implications for the diagnosis of headache conditions reinforcing the importance of accurate, detailed discussions of symptoms with a physician. Therefore this present study was undertaken to assess the severity of migraine related with comorbidities.

Methodology

This cross sectional study was carried out in the Neurology Outdoor and Headache Clinic at Dhaka Medical College Hospital, Dhaka from July 2010 to June 2011 for a period of 1 year. All the patients presented with migraine were included as study population who were divided into two groups. Migraine patients without comorbidities were designated as group I and with comorbidities were in group II. The patients were selected on the basis of migraine headache criteria². Patients with the typical history of migraine, age 16 years and above with total duration of headache six months or more were selected as study population. Headache due to causes other than migraine were excluded from this study. Diagnosis of associated psychiatric and physical comorbidities was done on the basis of history, clinical examination and relevant investigation. The short-form version of the Depression Anxiety Stress Scales (DASS) is a valid set of three self-report scales having 21(twenty one) items designed to measure the negative emotional states of depression, anxiety and stress⁸. After assessing depression and anxiety states, depression and anxiety

were categorized to major depressive episode and generalized anxiety disorder on the basis of diagnostic criteria of Diagnostic and Statistical Manual of mental disorders⁸. Persons were diagnosed as diabetes mellitus (DM) according to the diagnostic criteria of American Diabetes Association⁸. Study subjects were diagnosed as a case of hypertension⁹ and obesity¹⁰ according to the standard diagnostic criteria. The severity of migraine was assessed using the MIGSEV scale which was a 4 item which include nausea/vomiting, tolerability, pain intensity and disability in a questionnaire classifying the severity of migraine attacks based on patient self report¹¹. The clinical features, investigation findings and relevant data were collected in a preformed data sheet from each patient. These observation and results were compared with each other. Prior to the commencement of this study, the research protocol was approved by the RRC (Research review committee) of DMCH, Dhaka. Analysis of data was done with the help of computer by SPSS programme version 16.0 software. Appropriate statistical method was applied for data analysis and comparison. The significance of data was done with 95% confidence interval taking p value ≤ 0.05 as significant.

Results

The study included 70 patients, out of which 37 had migraine without comorbidity (Group-I) and 33 had migraine with comorbidity (Group-II). The mean age was 31.1 \pm 9.1 years (range from 16 to 55 years) in group I and 33.8 \pm 8.8 years (range from 16 to 55 years) in group II. Most of the patients were found in the age group of 21-30 years in group-I and 31-40 years in group II (Table 1).

Table 1: Age distribution of the study patients (n=70)

Age (in year)	Group I	Group II	P value
16-20	4(10.8%)	2(6.1%)	
21-30	16(43.2%)	12(36.4%)	
31-40	12(32.4%)	13(39.4%)	
41-50	3(8.1%)	5(15.2%)	
>50	2(5.4%)	1(3.0%)	
Total	37(100.0%)	33(100.0%)	
Mean \pm SD	31.1 \pm 9.1	33.8 \pm 8.8	0.212ns
Range (min-max)	(16 to 55)	(16 to 55)	

Group I= Migraine without comorbidity; Group II=Migraine with comorbidity; NS= Not Significant; P value reached from unpaired t-test

Among the 33 migraine patients with comorbidities, major depressive disorder was present in 8(24.3%), generalized anxiety disorder in 6(18.1%), hypertension in 7(21.2%), diabetes mellitus in 4(12.1%) patients and 8(24.3%) patients were found to be obese (Table 2).

Table 2: Distribution of Co-Morbidities among Migraine Patients (n=33)

Co-morbidity	Frequency	Percentage
MDD	8	24.3
GAD	6	18.1
HTN	7	21.2
DM	4	12.1
Obesity	8	24.3
Total	33	100.0

The severity of headache also varied in two groups. Headache was moderate in severity in 26(70.3%) patients in group I and 10(30.3%) in group II. Headache was severe in 5(13.5%) and 6(18.2%) patients in group I and group II respectively. Headache was very severe in 6(16.2%) patients in group I and 17(51.5%) patients in group II (Table 3).

Table 3: Distribution of the Study Patients According To Intensity of Pain (n=70)

Intensity of Pain	Group I	Group II	P value
Moderate	26(70.3%)	10(30.3%)	0.008s
Severe	5(13.5%)	6(18.2%)	0.592ns
Very severe	6(16.2%)	17(51.5%)	0.001s
Total	37(100.0%)	33(100.0%)	

*S=Significant, NS=Not significant; P value reached from chi square test

According to MIGSEV severity grade, study patients were classified into three groups, which were mild, moderate and severe grade. In group I, among migraine patients without co-morbidity 18(48.6%) patients had mild, 12(32.5%) had moderate and 7(18.9%) had severe migraine. On the other hand among 33 patients in group II (Migraine with co morbidity), 6(18.18%) patients had mild, 8(24.24%) patients had moderate and 19(57.57%) patients had severe migraine (Table 4).

Table 4: Distribution of Study Patients According to MIGSEV Severity Grade

Co-morbidity	MIGSEV severity grade			Total
	Mild (n=6)	Moderate (n=8)	Severe (n=19)	
MDD	1(3.03%)	2(6.06%)	5(15.15%)	8(%)
GAD	1(3.03%)	1(3.03%)	4(12.12%)	6(%)
HTN	1(3.03%)	2(6.06%)	4(12.12%)	7(%)
Obesity	2(6.06%)	2(6.06%)	4(12.12%)	8(%)
DM	1(3.03%)	1(3.03%)	2(6.06%)	4(%)
Total	6(100.0%)	8(100.0%)	19(100.0%)	33(100.0%)

Discussion

In this present study it has been observed that the mean age was 31.1±9.1 years and 33.8±8.8 years in group I and group II respectively and age range varied from 16

to 55 years in both groups. Maximum number was found in the 3rd decade in group I and 4th decade in group II. The mean age difference was not significant ($p>0.05$) between the two groups. Habib et al¹² in their study showed 40.27% of migraineurs were within the age range of 18 to 29 years and only 3.32% were above 50 years.

Out of 33 migraine patients with co-morbidities, major depressive disorder was found in 8(24.3%) cases; generalized anxiety disorder was found in 6(18.1%) cases; furthermore, 7(21.2%) cases had hypertension, 4(12.1%) cases were diabetic and 8(24.3%) cases were obese. Headache of moderate severity was observed in 70.3% in group I and 30.3% in group II. Severe headache was found in 13.5% and 18.2% in group I and group II respectively. Headache was very severe in 16.2% in group I and 51.5% in group II. Very severe headache was significantly ($p<0.05$) higher in group II patients.

Out of 33 migraine patients with comorbidities, 8 patients had MDD, out of which 1(3.03%) patient had mild, 2(6.06%) had moderate and 5(15.15%) had severe migraine. Six patients had GAD of whom 1 (3.03%) had mild, 1(3.03%) had moderate and 4(12.12%) had severe migraine. Seven patients were hypertensive of whom, 1(3.03) patient had mild, 2(6.06%) had moderate and 4(12.12%) had severe migraine. Obesity was present in 8 patients, where 2(6.06%) patients had mild, 2(6.06%) had moderate and 4(12.12%) had severe migraine. Four patients were diabetic out of whom, 1(3.03%) had mild, 1(3.03%) had moderate and 2(6.06%) had severe migraine. On the other hand among the 37 migraine patients without comorbidity, 18(48.6%) patients had mild, 12(32.5%) had moderate and 7(28.9%) had severe migraine. According to MIGSEV severity scale, mild migraine was found in 18(48.6%) patients in group I and 6(18.18%) in group II. Moderate migraine was found in 12(32.5%) and 8(24.24%) patients in group I and group II respectively. Severe migraine was found in 7(18.18%) patients in group I and 19(57.57%) patients in group II.

Presence of co-morbid major depression and generalized anxiety disorder tends to worsen the course of migraine by increasing the severity of migraine¹³. Bigal et al¹⁴ in their study found that obesity was associated with increase in the severity of migraine¹⁴. Mathew et al¹⁵ mentioned in their study that hypertension increases the severity of migraine in migraineurs. All these investigators have observed that comorbidities are associated with increased severity of migraine. The findings of the above authors are

consistent with the current study. Presence of co-morbid conditions is associated with increased severity and frequency of migraine headache. This is small scale study with a small sample size which may not be representative of migraine population. Moreover it was carried out only in one center. So multi-centered, large population based study will overcome the limitations.

Conclusion

In conclusion migraine severity is more in patients who have associated comorbidities like MDD, GAD, DM, HTN and obesity. So recognition of comorbid conditions through proper assessment in integrated manner is very much important in order to provide proper headache management in migraine population.

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