Original Research Article

A cross sectional study on the association between new onset of psychiatric symptoms with severity of cognitive impairment in elderly patients

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ABSTRACT

Background: Neuropsychiatric impairments play significant roles throughout the course of cognitive decline mainly in older adults with dementia or mild cognitive impairment (MCI). This study was aimed to find the association between psychiatric comorbidities and severity of cognitive impairment in elder patients presented with new onset of Psychiatric Symptoms.
Methods: A cross sectional study was done among elder subjects (≥60 years of age) presented with new onset of psychiatric symptoms during one year period. Mini International neuropsychiatric interview and Montreal Cognitive Assessment scale were used for psychiatric diagnosis and severity of cognitive impairment grading, respectively. Association between psychiatric comorbidities and MCI was statistically analyzed.
Results: Total 67 subjects were included in the study. Analysis of the psychiatric diagnosis revealed that major depressive episode (52.2%) was the most prevalent psychiatric disorder among the study population followed by Psychotic disorders (23.9%). Generalized anxiety disorder contributed to 19.4% of the total study population. Significant association (p<0.002) was identified between the severity of cognitive impairment and the psychiatric comorbidities.
Conclusions: A significant association was identified between the severity of MCI and the psychiatric comorbidities. Major depressive episode was the most prevalent psychiatric disorder followed by psychotic disorders and generalized anxiety disorder.

Keywords: Alzheimer's disease, Anxiety disorder, Cognitive impairment, Dementia, Depressive episode, Montreal cognitive assessment scale

INTRODUCTION

Psychiatric symptoms have been found to be the first indication of change, before the occurrence of cognitive symptoms, in up to 50% of all dementia patients.[1,2] Neuropsychiatric impairments play significant roles throughout the course of cognitive decline mainly in older adults with dementia or mild cognitive impairment (MCI). This includes agitation, depression, apathy, delusions, and hallucinations. Patients diagnosed with MCI present with a higher rate of neuropsychiatric symptom than healthy people.[3] Depression is the most studied symptom in MCI. The prevalence of depressive symptoms may be as high as 45%.[4] Similarly, apathy is also a prevalent behavioral manifestation in MCI patients. Several studies have found that near of one-third of patients with a diagnosis of MCI suffers apathy.[5] Apathy, agitation and anxiety were the most common symptoms in those with Alzheimer's disease and that their prevalence was 72%, 60%, and 48%, respectively.[6] The

early detection and prevention of dementia, particularly Alzheimer's disease (AD), necessitate the development of effective public health education programs. Hence the symptoms and preclinical changes of dementia need to be evaluated. It is suggested that they should be taken into consideration even before cognitive impairment is evident. It was previously known as behavioral and psychological symptoms of dementia.

Many patients develop neuropsychiatric symptoms as the first indicator of impending dementia.[7] It have been reported to occur at some point in 75% of patients with dementia.[8] Therefore, screening for cognitive impairment during the initial presentation of late onset neuropsychiatric symptoms may help in early detection of dementia. Ellison et al, report that the most frequently reported neuropsychiatric symptom in their MCI population under study was depression/dysphoria (63.3%), then apathy (60.5%), followed by anxiety, irritability/lability and night time behaviors.[9] Low mood has been found to be particularly prominent in the very early stages of cognitive decline.[10] Literature regarding the clinical profile of cognitive impairment in patients presenting with late onset psychiatric symptoms is sparse. Information regarding the nature of cognitive impairment in patients presenting with late onset psychiatric symptoms will help to screen for possible MCI and provide early intervention to those with detected deficits to improve their long term outcome. This study was aimed to analyse the association of clinical profile of elder patients presenting with first onset of psychiatric symptoms with the cognitive impairment.

METHODS

Study design and sampling

A cross-sectional study was conducted in the Department of Psychiatry, Amala Institute of Medical Sciences for a period of one year from January 2016-17. The sample size calculated was approximately 67 based on the previous study for the standard error of 5%. Patients (above 60 years of age) presented with psychiatric symptoms for the first time were included in the study. Patients who were not cooperative for interview, illiterate people or those with significant sensory impairment were excluded. Information was collected from the patient after receiving an informed consent. The study was approved by the Institutional Ethics Committee.

Study procedure

Diagnosis of the psychiatric disorder in the patients was made based on Mini International Neuropsychiatric Interview and clinical evaluation. Montreal Cognitive Assessment scale (MCOA) in regional language was used to assess the cognitive status of the patient. To assess the severity of dementia, MCOA rating scale was used. Score between 18-25, 10-17 and <10 indicates mild, moderate and severe cognitive impairment respectively.

Statistical analysis

Descriptive statistics was used for the study. Association between the cognitive impairment and symptoms of psychiatric disorder were analysed by Fishers exact test using SPSS (v16, IBM, Illinois, US). P <0.05 was considered as significant.

RESULTS

The mean age group of the study sample was 68.3±5.4 years with 56.7% (n=38) were females and the remaining 43.3% (n=29) were males. Table 1 shows the common psychiatric disorder among the population under study. The major depressive episode was the most common psychiatric disorder among the population under study contributing to 52.2% (n=35) of the total disease burden. Other common psychiatric disorders were psychosis contributing to 23.9% (n=16), generalized anxiety disorder (19.4%, n=13), mania (3%, n=2) and panic disorder (1%, n=1.5%). Table 2 shows the analysis of grade of cognitive impairment among the study population. The mean MOCA score is 18.72±6.835. 37.3% of the study population (n=25) had Mild cognitive impairment. 28.4% of the participants (n=19) showed Moderate cognitive impairment. 10.4% of the participants (n=7) showed severe cognitive impairment and 23.9% of the participants (n=16) did not show any cognitive impairment.

Table 1: Distribution of psychiatric disorders.

Diagnosis	Frequency	Percentage
Major depressive episode	35	52.2%
Suicidality	0	0%
Manic episode	2	3.0%
Panic disorder	1	1.5%
Agoraphobia	0	0%
Obsessive compulsive disorder	0	0%
Post-traumatic stress disorder	0	0%
Alcohol dependence syndrome	0	0%
Substance dependence (Non-alcohol)	0	0%
Psychotic disorders	16	23.9%
Anorexia nervosa	0	0%
Bulimia Nervosa	0	0%
Generalized anxiety disorder	13	19.4%
Medical, organic, drug cause ruled out	0	0%
Antisocial personality disorder	0	0%
Total	67	100.0%

Table 2: Degree of severity of cognitive impairment.

MOCA	Frequency	Percentage
Severe	7	10.4%
Moderate	19	28.4%
Mild	25	37.3%
Normal	16	23.9%
Total	67	100.0%

The analysis of major depressive episode and predominant psychiatric disorder among the study population is depicted in Table 3. Out of 35 participants who were diagnosed with major depressive episode, 2 of them had severe cognitive impairment, 5 of them had moderate cognitive impairment, 15 of them had mild cognitive impairment and 13 of them had no cognitive impairment. Among two patients diagnosed with Mania, both of them had moderate cognitive impairment. 1 patient who was diagnosed with panic disorder had moderate cognitive impairment. Among the 16 participants who were diagnosed with Psychotic disorders, 5 of them had severe cognitive impairment, 7 of them had moderate cognitive impairment, 4 of them had mild cognitive impairment. Among the 13 participants who were diagnosed with generalized anxiety disorder, 5 of them had moderate cognitive impairment, 5 of them had mild cognitive impairment and 3 of them did not have any cognitive impairment. The association showed P value is 0.002 which indicates a significant association between psychiatric disorder in our sample and cognitive impairment.

Table 3: Association between various psychiatric disorders and severity of cognitive impairment.

Diagnosis	MOCA				Total	P
	Severe	Moderate	Mild	Normal		
Major depressive episode	2	5	15	13	35	
Suicidality	0	0	0	0	0	
Manic episode	0	2	0	0	2	
Panic disorder	0	0	1	0	1	
Agoraphobia	0	0	0	0	0	
Obsessive compulsive disorder	0	0	0	0	0	
Post-traumatic stress disorder	0	0	0	0	0	0.002
Alcohol dependence	0	0	0	0	0	
Substance dependence	0	0	0	0	0	
Psychotic disorders	5	7	4	0	16	
Anorexia Nervosa	0	0	0	0	0	
Bulimia Nervosa	0	0	0	0	0	
Generalized anxiety disorders	0	5	5	3	13	

DISCUSSION

In this study, 2 of the subjects were diagnosed with Mania which constituted 3% of the total study population. Recent research has shown a correlation between late-onset mania and vascular changes in the brain.[11] But previous study reported that 10% of the older adult inpatients are diagnosed with late-onset bipolar disorder, which is more than the results in our study.[12] This may be due to the lower sample size or may be due to the poor understanding about the illness by the family members of the patients as they may think that it is a normal old age behavior. In this study we had 1 subject meeting the diagnostic criteria for panic disorder constituting 1.5% of the total study subjects. The phenomenology of panic disorder has been studied widely in the West but rarely in India. This study did not have any subject with a diagnosis of Alcohol dependence syndrome/alcohol abuse in the last 12 months. It may be due to the growing awareness among the elderly about the ill effects of alcohol use or may be due to their unwillingness to report about alcohol use. Despite the prevalence of current PTSD in adults over 60 ranges from 1.5% to 4%, as reported in several community studies, no subject with a diagnosis of Post-traumatic stress disorder was found in this study.[13] This may be due to a lower sample in our study or it may be due to the fact that our subjects may not have experienced a catastrophic stress in their life.

This study did not find any subject with a diagnosis of OCD. Perhaps it may be due to the small sample size. However, studies suggests a 6 month prevalence of 1% and an annual incidence of approximately 0.6% in the over 65s.[14,15] We have found 23.9% of the subjects were diagnosed with psychotic disorders. However, the epidemiologic catchment area study reported a lifetime prevalence of schizophrenia and other psychotic disorders among people aged 45-64 to be 1.0% and among people aged 65 years and older to be 0.3%.[16] A possible reason

for the higher number of cases in the psychotic disorders category maybe due to the fact that presentations of psychotic disorders with delusions, hallucinations and disorganized behavior would be easier to identify by the caregivers and hence brought for consultation earlier. This study did not find any subject with a diagnosis of Anorexia/Bulimia nervosa. Similarly, no literature was available regarding the existence of eating disorders in the age group above 60 years. We found 19.4% of the study subjects with generalized anxiety disorder. Most of the epidemiological studies done in India have neglected anxiety disorders.

Ellison et al, report that the most frequently reported neuropsychiatric symptom in their MCI population under study was depression/dysphoria (63.3%), then apathy (60.5%), followed by anxiety, irritability/lability and night time behaviors.[9] Low mood has been found to be particularly prominent in the very early stages of cognitive decline.[17] Also depression and apathy appear to be most useful for identifying MCI subjects at highest risk of developing dementia. Several prospective community studies suggest that depressive symptoms or depression at baseline are associated with increased risk of developing cognitive decline at follow up.[18] Reports of the prevalence of clinically significant depressive symptoms among community-dwelling older adults range from approximately 8% to 16%.[19] Severe depression with cognitive impairment, even when the cognitive impairment improves as depression lifts, remain a risk group for AD over 5 years.[20] The incidence of higher depression in developing countries may be related to cultural and socioeconomic influences. A recent community study from western India had documented varied BPSD such as irritability (15.1%), agitation (9.3%), apathy (8.1%), hallucination (8.1%), depression (7%), disinhibition (5.8%), and somatic symptoms such as poor sleep (5.8%), poor appetite (2.3%) and suspiciousness (2.3%).[21]

Significant association was identified between the severity of cognitive impairment and the psychiatric comorbidities in the study sample with p value of 0.002. This finding adds strength to the hypothesis that new onset psychiatric illness after the age of 60 years may be a pre-runner to dementia and needs detailed evaluation. All cases of late onset neuropsychiatric symptoms need to be evaluated for cognitive impairment objectively, even if there is no subjective report of memory impairment.

CONCLUSION

Major depressive episode was the most prevalent psychiatric disorder followed by psychotic disorders. Generalized anxiety disorder contributed to 19.4% of the total study population. Significant association was identified between the severity of cognitive impairment and the psychiatric comorbidities.

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