

PSYCHIATRIC MANIFESTATIONS AMONG SURVIVORS OF CEREBROVASCULAR ACCIDENT

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Abstract

Background: The aim of the present study was to assess the psychiatric manifestations among survivors of cerebrovascular accident. **Materials and Methods:** It is Institutional based observational, prospective study was conducted in our general Medicine, Neuromedicine and Psychiatry OPD and In-patient of General Medicine ward from April 2021 to September 2022 in CVA patients. All clinical data were recorded on predesigned and pre-validated proforma. **Result:** General Medicine Majority of our study subjects are within 45 to 54 years of age group and minimum percentage of study subjects are within 35-44 years. Most of the studies show incidence of CVA increases with age of person but in our study it is found that majority age group are middle aged. 70 percent study populations are male and 30 percent are female. Most of our study populations are educated upto 10th standard. 66.7 percent study population is hypertensive and 13.3% percent populations are diabetic. 73.3 percent study populations use tobacco. 80 percent study population stayed in hospital less than 3 days. 17.8 percent populations already had prior attack of CVA. 33.3 percent population had family h/o CVA. 93.3 percent population doesn't have family h/o psychosis. 23.3percent patient have mild depression, 10 percent patient have moderate depression where as 66.7 percent study population do not have depression among survivors of stroke. **Conclusion:** The majority of post-stroke psychiatric disorders had a favourable therapeutic response with psychiatric intervention. In spite of the "post stroke psychiatric syndrome" are take complacently and there cursory evaluation deprive them of psychiatric consultation. Also social stigma tagged with psychiatric consultation both on family members and physicians also hampers the holistic psychiatric care. So training for identification of post stroke psychiatric manifestations also imparted to family members and treating physicians.

INTRODUCTION

With the aging of the global population, stroke has become the second leading cause of death for people over age 60 and the fifth leading cause in people between the ages of 15 and 59 worldwide. Due to brain damage and loss of function, stroke is also a major cause of long-term disability in adults worldwide, which decreases the quality of life for patients and increases the global medical burden.^[1] Recently, neuropsychiatric issues appearing after stroke have raised concerns for clinicians and researchers. Psychiatric disorders are common complications post-stroke and are associated with worsened outcomes, including low quality of life,

increase in the burden of caregiving, and unfavorable functional status.^[2,3] Even early neuropsychiatric disorders after stroke (NDS) may increase the risk of mortality and recurrence in patients with stroke.^[4,5]

The current management and treatment of the majority of NDS is not satisfactory, except for some antidepressants that show therapeutic benefit.^[3-6] Patients with NDS do not even benefit from existing advanced medical intervention. A retrospective study showed patients with stroke and neuropsychiatric co-morbidities were slightly less likely to receive carotid revascularization intervention compared to those who did not have neuropsychiatric co-morbidities.^[7] A lack of subjective intervention willingness from patients

and inadequate social and family support may be the reason for the difference in intervention. Neuropsychiatric impairment after stroke encompasses a wide spectrum of diseases, including neurocognitive disorders and non-cognitive disorders.^[8]

Cerebrovascular Accident (CVA) is a neurological and degenerative disease with two different phases, the acute phase characterized by the patient's transition from hospital to home, and the chronic phase, which begins at six months post-stroke and lasts over time.^[9] The limitation of these phases is important due to the varied biopsychosocial changes in the short and long term of the survivors of this disease and, concomitantly, the demands for specific care that sometimes need support from others such as family caregivers.

Most stroke survivors have cognitive, psychological, and motor deficits that reduce their ability to perform basic daily activities and social participation,^[10] making them dependent on their families to provide care during community rehabilitation. As a consequence, these caregivers experience the burden of care, highlighted by the deterioration of physical and mental health, which affects the worsening of their Quality of Life (QOL).^[11] These caregivers need to receive continuous support from a formal support network, from the moment of hospital admission to the return home, including assistance to their health and training for care.^[12] However, it is not standard clinical practice for services, and health professionals offer this support to the caregivers. Studies point out that adequate social support must be preceded by the investigation of their needs.^[13-15]

The aim of the present study was to assess the psychiatric manifestations among survivors of cerebrovascular accident.

MATERIALS AND METHODS

It is Institutional based observational, prospective study was conducted in our general Medicine, Neuromedicine and Psychiatry OPD and In-patient of General Medicine ward from April 2021 to September 2022 in CVA patients. All clinical data were recorded on predesigned and pre-validated proforma. Clinical examination, relevant questionnaire, radiological testing was done on survivors of CVA patients visited in OPD of General Medicine, Neuromedicine or Psychiatry or admitted in Medicine ward. Patients enrolled in this study following the inclusion and exclusion criteria. Attempts were made to take proper history and investigate for confirmation of cerebrovascular accident patient. Data were analyzed following standard statistical methods. Present institutional based observational prospective study with purposive sampling method consisting of 90 patients diagnosed using ICD-10 criteria, was conducted in the Dept. of Medicine of BSMC Hospital, Bankura, West Bengal, presenting with

stroke. Patient was discharged after stabilization. Patient was interviewed after fifteen days when he or she visited in OPD for follow up. Mini International Neuropsychiatric Inventory (MINI) Plus for the diagnosis of psychiatric morbidity as per ICD-10 guidelines were used. All the data were recorded in data sheet. Then the patients were again interviewed at subsequent follow up till 6 months. All the patients included in the study were recent onset stroke with ability to speak and gave informed consent. Also those patients were unconscious, uncooperative and not having neurological and psychiatric manifestations were included in this study. Patients were interviewed in OPD attending for follow up. Some patients were not willing to participate and some patients died. So they were excluded from our study. Data were put in pretested, predesigned questionnaire and data were analyzed.

Inclusion Criteria

- Patients with definite history of recent onset stroke (>2 weeks but <6 months),
- Having ability to communicate verbally with the investigator
- Gave informed consent.

Exclusion Criteria

- Patients with unconsciousness,
- Altered sensorium, aphasia,
- Significant cognitive disturbances,
- Neurological disorders,
- History of previous psychiatric illness.

A complete medical and psychiatric, history of 90 patients inducted into study was done by using a semi-structured proforma. Many factors that confound the association between stroke and depression and other psychiatry illnesses, all potentially important variables such as age, sex, socio demographic profile, functional disability were included in the proforma. The patients were evaluated for behavioral disturbances and interviewed using the Mini International Neuropsychiatric Inventory (MINI) Plus for the diagnosis of psychiatric morbidity as per ICD-10 guidelines.^[16] Cognitive function was assessed by using Mini Mental Status Examination. Psychiatric rating scales (MBPRS, HAM-D, HAM-ANXIETY, YMRS) were used for psychosis, depression, anxiety and mania respectively.^[17,18] For depression, Beck Depression Inventory and objective Montgomery Asberg Depression Rating Scale also used.^{19,20} CT scan was done in each patient to understand the type of stroke. The results were subjected to statistical analysis using student's t-test (continuous variables) and chi-squared test (categorical variables) to achieve significant of various clinical variable ($p < 0.05$). Study was analyzed by using SPSS v20 by appropriate statistical analysis.

RESULTS

Majority of our study subjects are within 45 to 54 years of age group and minimum percentage of study subjects are within 35-44 years. Most of the studies show incidence of CVA increases with age of person but in our study it is found that majority age group are middle aged. 70 percent study populations are male and 30 percent are female. Most of our study populations are educated upto 10th standard. 66.7 percent study population is hypertensive and 13.3% percent populations are diabetic. 73.3 percent study populations use tobacco. 80 percent study population stayed in hospital less than 3 days.

17.8 percent populations already had prior attack of CVA. 33.3 percent population had family h/o CVA. 93.3 percent population doesn't have family h/o psychosis. 23.3percent patient have mild depression,

10 percent patient have moderate depression where as 66.7 percent study population do not have depression among survivors of stroke.

Out of 90 patients, 30 patients had depression. Male patients show more 34.9 % depression and female patient show 29.6% depression. The primary and upper primary groups are having more depression 35% and 36% respectively. Depression is equally distributed among both groups of hypertension. Here we can see more of depression among non diabetics. 34.8% tobacco users having depression while 29.1% among non tobacco users.

36.1% patients having depression who stayed in hospital less than 3 days. Those who are having past h/o CVA have 50% depression than 29.7%. 36.2% patients have depression who did not have Family H/O CVA. Here both group show equal 33.3% of depression in the family history of psychosis.

Table 1: Demographic data.

Coded age (Yrs)	No. of Patients	Percentage
35-44	4	4.4%
45-54	30	33.3%
55-64	28	31.1%
65-74	19	21.1%
More than 75	9	10%
Gender		
Male	63	70%
Female	27	30%
Education		
Illiterate	27	30%
Upto 5th standard	17	18.9%
Upto 10th standard	30	33.3%
Above 10th standard	16	17.8%
Co-morbidities		
Hypertension	60	66.7%
Diabetes	12	13.3%
Habits		
Tobacco use	66	73.3%
Hospital stay		
Less than 3 days	72	80%
More than 3days	18	20%

Table 2: Other features

P/H/O CVA	No. of Patients	Percentage
No P/H/O CVA	74	82.2%
P/H/O CVA	16	17.8%
F/H/O CVA		
No F/H/O CVA	69	76.7%
F/H/O CVA	21	23.3%
F/H/O psychosis		
No F/H/O psychosis	84	93.3%
F/H/O psychosis	6	6.7%
Presence of depression		
No depression	60	66.7%
Mild depression	21	23.3%
Moderate depression	9	10%

Table 3: Distribution of study subjects according to presence of depression in demographic variables

Age(years)	Presence of depression			Total
	No depression	Mild depression	Moderate depression	
35 -49	15	4	4	23
Coded50-64	26	11	2	39
Age65 and above	19	6	3	28
Total	60	21	9	90
SEX Male	41	16	6	63
Female	19	5	3	27

Total	60	21	9	90	
Education					
illiterate	19	6	2	27	
upto 5 th std	11	5	1	17	
upto 10th std	19	7	4	30	
above 10th std	11	3	2	16	
Total	60	21	9	90	
HYPERTENSION					
No	20	7	3	30	
Yes	40	14	6	60	
Total	60	21	9	90	
Diabetes Mellitus					
Total	No diabetes	50	19	9	78
	Diabetes	10	2	0	12
		60	21	9	90
Tobacco Use					
Notobacco USEuse		17	7	0	24
Tobaccouse		43	14	9	66
Total		60	21	9	90

Table 4: Distribution of study subjects according to presence of depression and stay in hospital, previous history of CVA, history of family of CVA

		Presenceofdepression			Total
		No depression	Mild depression	Moderate depression	
Stayinhospital After CVA	Lessthan 3days	46	20	6	72
	Morethan 3days	14	1	3	18
P/H/O	No P/H/O	52	16	6	74
	P/H/O	8	5	3	16
FAMILY H/O CVA	No	44	20	5	69
	Yes	16	1	4	21
Family history of psychosis		56	19	9	84
		4	2	0	6

DISCUSSION

Psychiatric disorders are common after stroke and traumatic brain injury (TBI) both in the short term and long term. They can be caused by regional disruption of neuronal network, impairment of regional cerebral blood flow, impaired cerebral metabolism, axonal injury, and pressure effect of intracranial bleed. Around 16 million people each year experience first ever stroke. Of these patients, 5 million become disabled and 5.7 million dies.^[21] Traumatic brain injuries are also common and pose an enormous burden on families and caregivers because of the associated neuropsychiatric complications.^[22] However, these neuropsychiatric complications are often remained unaddressed or not adequately treated because of the treating doctor's preoccupation with other severe physical disabilities, whereas treating these neuropsychiatric complications can improve the overall outcome of the patients to a considerable extent.

The majority of patients 30% were in the age group of 45-54 years followed by 55-64 years group (28%). 21.1% patients developed post stroke behavioural disturbances in the late middle group. Males outnumbered females (70%:30%). Such a sex predilection gets support from earlier literature which also stated that females have on an average 30 % lower incidence of stroke than males. In this study, 18.9% patients presented with depression mixed with anxiety. The majority of these patients were in their fifth and sixth decades. On Mental Status Examination, revealed mixed features of mild

depression and marked anxiety. Sergio (1990), and Jong S. Kim (2016) who reported higher incidence of depression plus anxiety remains in left cortical lesions.^[23,24]

7.40% patients from rural area show social phobia, but no patients from urban area shows such. It is found 18.51 % illiterate patients and 3.33 % in educated upto 5th std. It is found 6.66 % in both non hypertensive and hypertensive survivors of stroke patients.

It is found 8.33 % in diabetic patients and 6.41 % in non-diabetic patients. 9.09 % patients show social phobia in those who use tobacco. It is found 6.94 % patients those who stayed less than 3 days and 5.55 % those who stayed more than 3 days. It is found 6.75 % in those who have no P/H/O CVA and 6.25% those who have P/H/O CVA. Social phobia is 14.28 % patients who have F/H/O CVA rather 4.34 % who doesn't have F/H/O CVA. 16.66 % patients show it who have F/H/O psychosis rather 5.95% who doesn't have such. In 2017, the American Heart Association and American Stroke Association jointly issued the first scientific consensus statement for healthcare, which comprehensively discussed the epidemiology, pathophysiology, screening, management, and prevention of PSD.^[25] Based on the results of a meta-analysis with 2907 participants, the center for epidemiological studies depression scale, Hamilton depression rating scale, and PHQ-9 scores have proven to have higher sensitivities for identifying PSD, using the international classification of disease or DSM diagnosis of depression as the reference standard.^[26] The PHQ-9

is one of the most commonly used tools for screening for PSD with high validity and reliability in primary care. One individual patient's data meta-analysis showed that a cutoff of a score of 10 on the PHQ-9 yielded a maximum diagnostic performance.^[27] Considering the structured interview for DSM as the reference standard for PSD, the sensitivity and specificity of PHQ-9 were 0.82 and 0.97, respectively. The overall diagnostic performance of the PHQ-9 was better than the hospital anxiety depression scale-D and geriatric depression scale.^[28] Another individual participant's data meta-analysis of PHQ-9 reported the existence of selective cutoff reporting bias when estimating sensitivity in most studies.^[29] In addition, a systematic review concluded that the results regarding the sensitivity and specificity of the PHQ-9 for PSD screening and identification were uncertain.^[30]

CONCLUSION

The majority of post-stroke psychiatric disorders had a favourable therapeutic response with psychiatric intervention. In spite of the "post stroke psychiatric syndrome" are take complacently and their cursory evaluation deprive them of psychiatric consultation. Also, social stigma tagged with psychiatric consultation both on family members and physicians also hampers the holistic psychiatric care. So, training for identification of post stroke psychiatric manifestations also imparted to family members and treating physicians. It is, therefore, our recommendation that stroke syndrome should be viewed in a bio psychosocial model, and a holistic approach consisting of both physical and psychiatric management should be directed to achieve better results.

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