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Evaluation of anxiety and depression following stroke- A clinical study

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Abstract

Background: Stroke titlists have treated anxiety as a homogenous condition, and intervention studies have followed suit, neglecting the different treatment approaches for phobic and generalized anxiety. The present study was conducted to evaluate anxiety and depression following stroke.

Materials and Methods: 184 patients of stroke of both genders were included. Variables such as type of stroke, underlying disease, stroke onset date were recorded.

Results: Out of 184 patients, males were 82 and females were 102. The mean length of stay was 28.1 days, type of stroke was infarct in 110 and haemorrhagic in 72, comorbid diseases seen were diabetes in 56, hypertension in 124, dyslipidemia in 112 and previous stroke in 42, smoking was present in 64, alcoholism in 80, weakness side was right in 44, left in 80 and bilateral in 60. Common risk factors for anxiety and depression in patients with stroke was hypertension (0.49), dyslipidemia (0.51), infarction (2.35), smoking (0.31) and female gender (1.82). The difference was significant ($P < 0.05$).

Conclusion: Anxiety and depression are common after stroke. Common risk factors were female gender, hypertension, dyslipidemia, infarction and smoking.

Keywords: Anxiety, depression, Hypertension

Introduction

“It is said that no one truly knows a nation until one has been inside its jails. A nation should not be judged by how it treats its highest citizens, but its lowest ones.” - Nelson Mandela
More than 10.2 million people worldwide are held in prisons. As per the World Prison Population List-2013, there is a general trend of growth in prison population in majority of nations, including in India. As of 2017, the latest figures available for India, there are 4, 11, 992 prisoners. Majority of prisoners in India are uneducated, poor and belong to marginalized or socially disadvantaged groups and have limited knowledge about health and practice unhealthy lifestyles. Thus, they represent a distinct and vulnerable health group needing priority attention ^[1].

International Law

Anxiety after stroke is common and disabling. Stroke trialists have treated anxiety as a homogenous condition, and intervention studies have followed suit, neglecting the different treatment approaches for phobic and generalized anxiety ^[1, 2].

Anxiety is common, affecting around a quarter of stroke¹ and nearly a third of transient ischemic attack (TIA). It can hamper stroke rehabilitation effort and prevent patients from returning to their usual activities ^[3]. Despite earlier observations that phobic anxiety might be present after stroke, intervention studies have treated anxiety poststroke as one unitary phenomenon and evaluated general approaches, such as relaxation and antidepressants, which are unlikely to be effective in phobic anxiety ^[4]. Clinical trials have not yielded any definitive evidence to guide treatment for anxiety after stroke. It is well recognized in non-stroke populations that phobic disorder and generalized anxiety disorder (GAD) need different treatment approaches ^[5]. Depression has been related to physical handicap and the limitations in activity of daily living (ADL), impaired quality of life (QOL). Anxiety also affected physical disability and QOL of stroke patients. It is of interest to assess the impact of anxiety and depression during rehabilitation in determining functional outcome and quality of life ^[6].

Emotional changes related to cerebrovascular disease may be caused by the patient's brain damage per se or accounted for by psychological reactions.

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However, early identification and treatment of anxiety and depression symptoms may prevent more serious effects on neurological outcome in stroke patients [7]. The present study was conducted to evaluate anxiety and depression following stroke.

Materials and Methods

The present study comprised of 184 patients of stroke of both genders. All were informed regarding the study and their written consent was obtained.

Patient >18 years, had stable vital signs within 48 hours, tolerate sitting position without vertigo or dizziness for at least 30 minutes were included. Patients who had severe medical conditions, have major psychiatric disorder such as dementia, schizophrenia, or a present psychotic episode and had coexisting physical disability such as amputation, spinal cord injury, blindness were excluded.

Demographic profile such as name, age, gender etc. was recorded. Variables such as type of stroke, underlying disease, stroke onset date were recorded. Functional ability assessed with Barthel Index (BI), cognitive function tested with Thai Mental State Examination (TMSE), quality of life using WHOQOL-BREF questionnaire and emotional using Hospital Anxiety and Depression Scale (HADS).

HADS is a 21-point scale (0 best, 21 worst), with a cut-off point of greater than 10 identify anxiety or depression. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

Results

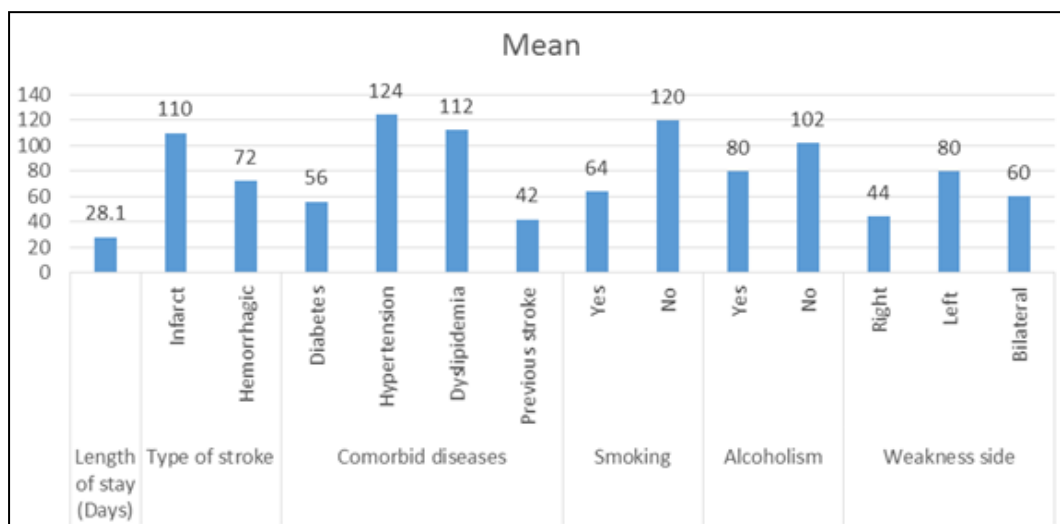
Table 1: Distribution of patients

Total- 184		
Gender	Males	Females
Number	82	102

Table I shows that out of 184 patients, males were 82 and females were 102.

Table 2: Patient Characteristics

Variables	Parameters	Mean	P value
Length of stay (Days)		28.1	-
Type of stroke	Infarct	110	0.05
	Hemorrhagic	72	
Comorbid diseases	Diabetes	56	0.01
	Hypertension	124	
	Dyslipidemia	112	
	Previous stroke	42	
Smoking	Yes	64	0.02
	No	120	
Alcoholism	Yes	80	0.07
	No	102	
Weakness side	Right	44	0.06
	Left	80	
	Bilateral	60	



Graph 1: Patient Characteristics

Table II, graph I shows that mean length of stay was 28.1 days, type of stroke was infarct in 110 and haemorrhagic in 72, comorbid diseases seen were diabetes in 56, hypertension in 124, dyslipidemia in 112 and previous stroke in 42, smoking was present in 64, alcoholism in 80, weakness side was right in 44, left in 80 and bilateral in 60. The difference was significant ($P < 0.05$).

Table 3: Univariate analysis and multivariate logistic regression analysis of risk factor with anxiety and depressive symptoms

Variables	Crude OR	P value
Hypertension	0.49	0.02
Dyslipidemia	0.51	0.01
Infarction	2.35	0.05
Smoking	0.31	0.03
Female gender	1.82	0.04

Table III shows that common risk factors for anxiety and depression in patients with stroke was hypertension (0.49), dyslipidemia (0.51), infarction (2.35), smoking (0.31) and female gender (1.82). The difference was significant ($P < 0.05$).

Discussion

Stroke is a leading cause for disability, dementia and death. It is a predisposing factor for epilepsy, falls and is also a leading cause of functional impairments, with 20% of survivors requiring institutional care and 15% - 30% being permanently disabled. Depression is a common sequel of stroke.⁸ World Health Organisation (WHO) defines stroke as "rapidly developing clinical signs of focal disturbance of cerebral function lasting more than 24 hours or leading to death, with no apparent cause other than that of vascular

origin. Stroke is divided into two broad categories based on its pathophysiology- Ischaemic strokes caused by occlusion of arteries supplying the brain which account for 50%– 85% of all strokes worldwide and haemorrhagic strokes which are caused by bleeding from one of the brain's arteries which account for 8%-34% of all strokes worldwide [9]. The association of depression with stroke has been recognized by clinicians for almost 100 years, but it is only within the past 30-35 years that systematic studies of depression following stroke have been conducted. It has also been the most common psychiatric symptom studied in the post stroke period. That is not to say that depression is the sole symptom of psychiatric distress observed and studied in this population. Anxiety, apathy, fatigue, sleep disturbances etc. are some of the other symptoms commonly observed [10]. The present study was conducted to evaluate anxiety and depression following stroke.

In present study, out of 184 patients, males were 82 and females were 102. Chun *et al.* [11] followed prospectively a cohort of new diagnosis of stroke/transient ischemic attack at 3 months with a telephone semi-structured psychiatric interview, Fear Questionnaire, modified Rankin Scale, EuroQol-5D5L, and Work and Social Adjustment Scale. Anxiety disorder was common. Phobic disorder was the predominant anxiety subtype: phobic disorder only, 18 of 175 (10%); phobic and generalized anxiety disorder, 13 of 175 (7%); and generalized anxiety disorder only, 7 of 175 (4%). Participants with anxiety disorder reported higher level of phobic avoidance across all situations on the Fear Questionnaire. Younger age and having previous anxiety/depression were predictors for anxiety poststroke/transient ischemic attack. Participants with anxiety disorder were more dependent (modified Rankin Scale score 3–5, [anxiety] 55% versus [no anxiety] 29%; $P<0.0005$), had poorer quality of life on EQ-5D5L, and restricted participation (Work and Social Adjustment Scale: median, interquartile range, [anxiety] 19.5, 10–27 versus [no anxiety] 0, 0–5; $P<0.001$).

We found that mean length of stay was 28.1 days, type of stroke was infarct in 110 and haemorrhagic in 72, comorbid diseases seen were diabetes in 56, hypertension in 124, dyslipidemia in 112 and previous stroke in 42, smoking was present in 64, alcoholism in 80, weakness side was right in 44, left in 80 and bilateral in 60. Masskulpan *et al.* [12] included two hundred fifty- one stroke patients. Anxiety and depressive symptoms were evaluated in stroke patients using the Hospital Anxiety and Depressive Scales (HADS) twice, on admission and at discharge to rehabilitation program. Factors associated with anxiety and depressive symptoms were identified using univariate and multiple logistic regression analyses. Functional ability and quality of life using Barthel ADL Index (BI) and WHOQOL-BREF questionnaires respectively were recorded and analyzed. It was found that 25.5% of the patients suffered from anxiety symptoms, 37.8% from depressive symptoms, and 17.5% from both. Anxiety symptoms were associated with depressive symptoms and negatively associated with dyslipidemia. Depressive symptoms were related to anxiety symptoms and female gender. Patients with anxiety and depressive symptoms had lower functional ability and quality of life than patients without symptoms on admission and at discharge. After the rehabilitation program, patients without anxiety symptoms showed improvement in functional outcome and QOL. However, patients with or

without depression symptoms have improvement in functional outcome after rehabilitation. However, patients without depressive symptoms showed more items improvement in QOL than patients with depression.

We observed that common risk factors for anxiety and depression in patients with stroke was hypertension (0.49), dyslipidemia (0.51), infarction (2.35), smoking (0.31) and female gender (1.82). The prevalence rate of 46% observed by Caeiro *et al.* [13] and 52% by Nys *et al.* [14] in studies carried out on stroke patients within almost the same interval following stroke. But other studies done during similar post stroke intervals provided mixed results. Fure *et al.* [15] using the same scale observed a prevalence rate of 26.4% anxiety, 14% depressive symptoms and nearly 8% of patient with co-morbid symptoms.

Conclusion

Authors found that anxiety and depression are common after stroke. Common risk factors were female gender, hypertension, dyslipidemia, infarction and smoking.

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