CHARACTERISTICS OF POST-STROKE DEPRESSION IN ELDERLY PATIENTS

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Post-stroke depression is common, affecting one third of stroke survivors. Elderly with poststroke depression are at a higher risk for suboptimal recovery, recurrent vascular events, poor quality of life, and mortality. The objective was to determine the prevalence and characteristics of post-stroke depression in elderly patients. A cross- sectional descriptive study was conducted at the National Geriatric Hospital in 2019 with 187 participants aged 60 and older who were diagnosed with post-stroke depression. Depression is assessed by the Geriatric Depression Scale Short Form (GDS-15). The prevalence of post-stroke depression in elderly patients was 61.96%. In particular, mild depression was 30.48%, moderate depression was 17.65% and severe depression was 12.83%. The most frequent manifestations of depression were "Feel not full of energy" (82.9%), "Feel have more problems with memory than most people" (60.4%). Depression manifestation with the least frequency was "Feel that your situation is hopeless" (13.4%). The prevalence of post-stroke depression in elderly patients at the National Geriatric Hospital was high. Health care staffs and family need to pay more attention to the mental health aspects of patients, regularly evaluate and screen for early detection of post-stroke depression.

Keywords: post-stroke, depression, elderly patients

I. INTRODUCTION

Stroke represents the third most common cause of death in the world, following coronary heart diseases and cancer.[1] It lead to physical limitations in daily living and psychological disorders, expressed in alterations to an individual's behavior and emotion.[2] In particular, depression is one of the most common complications and affects one-third of stroke survivors.[3] Post stroke depression is classified as "mood disorder due to a general medical condition" with the specifiers of depressive features, major depressive – like episodes, manic features, or mixed features by The Diagnostic and Statistical Manual (DSM) IV.[4] Post-stroke depression (PSD) in elderly patients has been considered the most common neuropsychiatric consequence of stroke up to 6 – 24 months after stroke onset. [5]

In the acute period (< 1 month after stroke), the frequency of depressive disorders was found to be 30%, 33%, and 36% in rehabilitation, community, and hospital based settings, respectively.[5] During this period, patients encountered many problems such as disabilities, its effects on life and relationships with their families. It reduces adherence to treatment, increases disability complications, increases mortality, increases use of health services and medical care costs.

According to the Ministry of Health of Viet Nam, each year, approximately 200,000

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Recceived day: 29/06/2020
Accepted day: 13/08/2020

people in Vietnam suffer from a stroke, 50% resulted in death and 90% of stroke survivors live with neurological and motor deficits. However, data on post-stroke depression in Viet Nam are inadequate, particularly in elderly patients. Information about the prevalence and characteristics of depression among post stroke in elderly patients is essential to develop strategies for prevention, early detection and appropriate management resulting in improved outcomes. Therefore, we conducted this research to determine the prevalence and characteristics of post-stroke depression in elderly patients.

II. SUBJECTS AND METHODS

1. Study subject

Post-stroke inpatients aged ≥ 60 years old or above treated in the National Geriatric Hospital.

Inclusion Criteria: patients aged > 60 years old diagnosed of stroke according to the World Health Organization guidelines (sudden onset, have nerve function damage, lasts over 24 hours, have vascular etiology), have Magnetic Resonance Imaging (MRI) or brain CT scan with evidence of ischemic stroke or hemorrhagic stroke, time of stroke onset to time participation in the study at least 14 days (2 weeks), patients and patient's family agreed to participate, had the physical and cognitive abilities to do a face-to-face interview.

Exclusion criteria: the patient is diagnosed with a transient ischemic attack or a previous brain injury (for example, traumatic brain injury), consciousness disorders, acute confusion due to all causes. Patients with the inability to communicate, have a history of psychosis (such as severe dementia, depression, bipolar emotional disorder, schizophrenia, and substance abuse)

2. Study design

Research method: This is a cross- sectional descriptive study.

Location: National Geriatric Hospital.

Time: The research was conducted from April 1st to October 15th 2019

Variables and indicators: Variables of general information include: age (divided into 3 groups: 60 - 69, 70 - 79, ≥ 80, gender (male, female), residential area (rural, urban), marital status (single, living with spouse), role in family were changed after stroke (Unaltered, decrease). Variables of stroke characteristics include: type of stroke; brain lesion location; time since stroke; facial paralysis, communication difficulties, difficulty swallowing, hemiplegia, co-morbidities. Depression is assessed by the Geriatric Depression Scale Short Form (GDS-15). Level of depression: Absent (0 - 4), Mild (5 - 8), Moderate (9 - 11), Severe (12 - 15). Variable of related factors: Independence in activities of daily living using the Barthel Scale/ Index (BI), Social support assessment using Perceived Social support (MSPSS)

3. Data processing and data analysis

The process of data coding, entry and analysis was done by using the statistical Package for Social Science (SPSS) software (version 22). Descriptive statistics were adopted to examine characteristic data: frequency, percentage, mean, standard deviation. Statistical significance was accepted at the 95% confidence level ($p < 0.05$)

4. Ethical consideration

The study was conducted at the National Geriatric Hospital. Study subjects were explained clearly about the purpose of the study, and they were willing to participate in the study.

III. RESULTS

1. Demographic characteristics

A total of 187 patients were recruited for the study from August 1st to September 30st 2019. The demographic characteristics of sample presented in detail in tables below:

Table 1. Demographic characteristics (n = 187)

		Frequency (n)	Percent (%)
Age	60 - 69	98	52.4
	70 - 79	60	32.1
	≥ 80	29	15.5
Gender	Male	116	62
	Female	71	38
Residential area	Rural	81	43.3
	Urban	106	56.7
Marital status	Single	13	7
	Living with spouse	174	93
Role in family are changed after stroke after stroke	Unaltered	56	29.9
	Decrease	131	70.1

The age of sample was ranged from 60 to 94 with the mean age was 67.83 years old, in which, the greatest distribution was generated by patients aged between 60 to 69, representing 52.4%. The male/female ratio was 1.63. After stroke, up to 70.1% (n = 131) patients have reduced family roles.

2. Characteristics of stroke

Table 2. Characteristics of stroke (n = 187)

		Frequency (n)	Percent (%)
Type of Stroke	Ischemic	127	67.9
	Hemorrhagic	60	32.1
Time since stroke	2 - 4 weeks	156	83.4
	5 - 12 weeks	27	14.4
	13 - 24 weeks	2	1.1
	> 24 weeks	2	1.1
Brain lesion location	Right	79	42.2
	Left	100	53.5
	Both sides	8	4.3

		Frequency (n)	Percent (%)
Facial paralysis	Yes	55	29.4
	No	132	70.6
Communication difficulties	Yes	94	50.3
	No	93	49.7
Difficulty swallowing	Yes	66	35.3
	No	121	64.7
Hemiplegia	Yes	139	74.3
	No	48	25.7

The mean time since stroke was 3.58 ± 3.78 weeks. The majority of time since stroke as less than 4 weeks (83.4%, n = 156) while only 16.6% (n = 31) more than 4 weeks. The ischemic stroke (67.9%, n = 127) and the lesion site in the left hemisphere (53.5%, n = 100) accounted for the majority subjects. Most patients had hemiplegia (74.3%, n = 139).

3. The prevalence of post-stroke depression in elderly patients

Depression was assessed by the GDS-15. The mean GDS-15 score was 6.33 ± 4.10, with the lowest is 0 (7 patients) and the highest is 15 (9 patients).

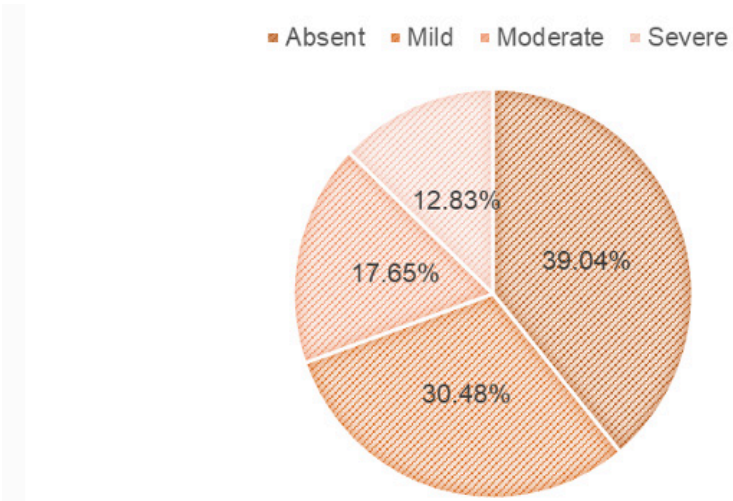

Figure 1. Depression level assessment by GDS 15 (n = 187)

The prevalence of post-stroke depression in elderly patients was 61.96% (n = 114). In particular, mild depression was 30.48% (n = 57), moderate depression was 17.65% (n = 33) and severe depression was 12.83% (n = 24). There were 39.04% participants without depression.

Table 3. Relationship between post-stroke depression and type of stroke (n = 187)

Characteristics of stroke		Depression		p
		Yes	No	
Type of stroke	Ischemic	81 (63.8%)	46 (36.2%)	0.25
	Hemorrhagic	33 (55%)	27 (45%)	

There was no relationship between the type of stroke and depression

4. Distribution of depressive symptoms in depressive patients

Table 4. Distribution of depressive symptoms (n = 187)

Signs and symptoms		Frequency (N)	Percent (%)
Basically satisfied with your life	Yes	126	67.38
	No	61	32.62
Dropped many of your activities and interests	No	86	46.0
	Yes	101	54.0
Feel that your life is empty	No	140	74.9
	Yes	47	25.1
Often get bored	No	100	53.5
	Yes	87	46.5
In good spirits most of the time	Yes	82	43.9
	No	105	56.1
Afraid that something bad is going to happen to you	No	77	41.2
	Yes	110	58.8
Feel happy most of the time	Yes	91	48.7
	No	96	51.3
Often feel helpless	No	124	66.3
	Yes	63	33.7
Prefer to stay at home, rather than going out and doing new things	No	107	57.2
	Yes	80	42.8
Feel you have more problems with memory than most people	No	74	39.6
	Yes	113	60.4
Think it is wonderful to be alive	Yes	157	84.0
	No	30	16.0
Feel pretty worthless the way you are now	Yes	122	65.2
	No	65	34.8

Signs and symptoms		Frequency (N)	Percent (%)
Feel not full of energy	Yes	32	17.1
	No	155	82.9
Feel that your situation is hopeless	No	162	86.6
	Yes	25	13.4
Think that most people are better off than you are	No	141	75.4
	Yes	46	24.6

The most frequent manifestations of depression were "Feel not full of energy" with 82.9% (n = 155), "Feel you have more problems with memory than most people" with 60.4% (n = 113). Depression manifestation with the least frequency was "Feel that your situation is hopeless" with 13.4% (n = 25).

IV. DISCUSSION

There were 187 participants in this study. The subjects' mean age was 70.57 ± 8.04 years, ranging between 60 - 94 years. The aged 60 – 69 accounted for the highest proportion with 52.4%, 70 - 79 age group and aged ≥ 80 with 32.1% and 15.5%, respectively. This result was equal to the mean age in the study of Le Thi Thanh Tuyen, at C hospital, Da Nang: The mean age was 72.02 ± 10.52 years, ranging between 60 and 96 years.[6] However it was lower than the mean age in United State of America conducted by Ellen et.al (76.7 ± 5.17 years).[7]

The mean score of GDS-15 was 6.33 ± 4.10 with the prevalence of post-stroke depression in elderly patients was 61%. In particular, mild depression was 30.48%, moderate depression accounted for 17.65% and severe depression was 12.83%. There were 39.04% participants without depression. The result was much higher than Hackett et.al with only 31%. The research of Emanuella et al. used GDS-15 for 90 subjects, the prevalence of PSD in the elderly stroke survivors was 27.7%,[8] lower than our research. This difference may be explained by our study only focused on stroke inpatient. According to Johan, PSD rates depend on the setting in which patients are examined, demonstrating greater rates among hospital inpatient-based locations (acute stroke units, general hospital wards, or rehabilitation centers) than community-based settings.[5]

In a prospective study conducted in China on stroke survivors treated at a teaching hospital, the prevalence of PSD, as measured by the Hamilton Depression Rating Scale, was 27.4% two weeks after stroke.[9]

Similarly, in Finland, 27% of survivors of the first ischemic stroke event had PSD two weeks after stroke, according to the Beck Depression Inventory.[10] When compared to domestic studies, there was difference between researches. Le Thi Thanh Tuyen used the Post-Stroke Depression Rating Scale (PSDRS), showed 69.7% subjects had depression,[6] higher than our research. According to Do Tu Duy and Tran Minh Thu, patients with depression, diagnosed according to DSM-IV accounted for 36.5%, lower than our research. Different assessment tools for depression using different diagnostic criteria, different sample sizes, different inclusion criteria and research time may also being the cause of the differences in

depression rates between studies.

The most frequent manifestations of depression were no “Feel not full of energy” with 82.9%, “Feel you have more problems with memory than most people” with 60.4%. Depression manifestation with the least frequency was “Feel that your situation is hopeless” with 13.4%. Nahathai et al found three consistent common factors across most of the languages tested such as ‘dysphoria’ (items 3, 4, 8 and 10), ‘social withdrawal-apathy-cognitive impairment’ (items 2, 12 and 14) - except in the Korean language, and ‘positive mood’ (items 1, 7, 9 and 15). The difference could be explained by language differences producing a different factor structure. Kim et al. provided such evidence when comparing mean variable cosines and congruence coefficients to assess the loadings of the factors.[11]

V. CONCLUSION

The prevalence of post-stroke depression in elderly patients at the National Geriatric Hospital was high. Health care staffs and family need to pay more attention to the mental health aspects of patients, regularly evaluate and screen for early detection of post-stroke depression.

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