Related Factors of Recurrent Stroke among Stroke Patients in Rajavithi Hospital

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Abstract

Background: Patients who have first attack of stroke, trend to have recurrent stroke more than normal people, which can decrease quality of life and increase morbidity and mortality. Current data in Rajavithi hospital about prevalence and related factors of recurrent stroke is few.

Objective: To describe the prevalence and related factors of recurrent stroke

Methods: This epidemiologic research was conducted base on a retrospective study of 914 ischemic stroke patientsfrom January 1st, 2015 to December 31st, 2019 presented in Rajavithi internal medicine unit.Withdemographic datas of age, sex, BMI, hypertension, diabetes mellitus, dyslipidemia, obesity, old cerebrovascular disease, atrial fibrillation, smoking, alcohol drinking, and history of routine exercises were collected manually. The data was analyzed by the stepwise regression method to find the most significant valuable to recurrent stroke.

Results: Prevalence of recurrent stroke in Rajavithi hospital was 16.7%. Mean age was 66 years old. Old cerebrovascular disease, dyslipidemia and smoking were significant related factors. However, hypertension, diabetes mellitus, obesity, atrial fibrillation were associated, but were not significant.

Conclusion: Old cerebrovascular disease, dyslipidemia and smoking were major related factors of recurrent stroke in Rajavithi hospital. Physicians should be aware of secondary prevention for decreasing morbidity and mortality.

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Introduction

Ischemic stroke is common problem in Thailand. The incidence is 206 per 100,000 people, this statistic data is from the Department of Public health, 2007.[1] Stroke is the third cause of death in Thailand.

In the future, rate of stroke trend to rising due to the growing of elderly populations in 2021.[2] The mortality rate is 10% and 50-60% is still having morbidity after onset of stroke.

Patients who have first attack of stroke, trend to have recurrent stroke more than normal people. The mortality rate after the second attack of stroke is up to 56.2% and the third attack is 80%.[3]

This time the incidence of recurrent stroke is 9.4-32.1%. The risk of recurrent stroke is how long the first attack was occurred.

The modified risk factors of stroke are hypertension, diabetes, dyslipidemia, obesity, old cerebrovascular disease, atrial fibrillation, smoking, alcohol drinking, and exercise.

If we can control this modified risk factors, we also prevent recurrent stroke, morbidity and mortality too.

Objective

To describe the prevalence and related factors of recurrent stroke

Subjects and Methods

1. Patients

We retrospect analyzed 914 patients with age more than 18 years old and diagnosed with ischemic stroke. All of them admit at stroke unit of Rajavithi hospital between January 2015 - December 2019.

2. Data collection and analysis

Manual medical records review was conducted to collect demographic data, age, gender, BMI, underlying disease, risk factors such as smoking, exercise, current medications, CT scan brain findings.

3. Statistical analysis

Descriptive statistics were performed for each variables including means, medians and standard deviations for continuous variables and frequencies for categorical as percentages.

Result

1. Demographic data

A total of 914 patients with age more than 18 years old and diagnosed with ischemic stroke. All of them admit at stroke unit of Rajavithi hospital between January 2015 - December 2019. Patients are male 356 people, female 558 people. Mean age is 66 years old, minimum age is 31 years old and maximum age is 101 years old. Patients who have recurrent stroke are 153 people. The underlying diseases of patient who have recent and recurrent stroke are as Table 1 and 2.

Table 1

Demographic data	Number	Percentage
Gender		
Male	356	38.95
Female	558	61.05
Age		
≤ 59	252	27.57
60-69	248	27.13
70-79	252	27.57
≥ 80	162	17.72
BMI		
≤ 25	814	89.06
> 25	100	10.94
Underlying disease		
DM	342	37.42
HT	641	70.13
DLP	354	38.73
AF	147	16.08
Old CVA	153	16.74

Table 2

Underlying disease	Number (people)	Percentage
Diabetes mellitus	66	43.13
Hypertension	107	69.93
Dyslipidemia	62	40.52
Atrial fibrillation	30	19.61
Ischemic heart disease and valvular heart disease	24	15.69
Chronic renal failure	7	4.68
Obesity	3	1.96
unknown	17	11.11

Duration between first attack of stroke and others as Table 3

Table 2

Duration	Number	Percentage
< 1 year	82	53.59
1-5 years	71	46.41
total	153	100

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Discussion

This study reveals prevalence of recurrent ischemic stroke 153 patients from 914 stroke patients in stroke unit (16.74%), duration between each attack is less than 1 years, especially 1-3 months, 82 patients (53.59%), 1-5 years 71 patients (46.41%). The most related risk factors are dyslipidemia, old cerebrovascular disease, smoking related to some studies of Satit Kasuree, Wittawat Siriyong that explained related factors such as poor controlled blood pressure and lipid profile.[4] Some study, Krissana Pirawet, reveals old CVA, heart disease,atrial fibrillation, smoking, alcohol drinking are risk factors of stroke.[5]

From our study reveals hypertension, diabetes mellitus, obesity are not related to recurrent stroke different from other studies.

Due to retrospective study that history of exercise and history and alcohol drinking are not enough evidence to analyze data.

Limitations of the study

Limitation of this study including of retrospective analysis in single center. Some of patients can't remember some data of risk factor. The individualized medical recording of medical history and clinical presentations are varies.

Conflicts of interest

There is no conflict of interest in this study.

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