Prevalence of Poststroke Depression in Thai Stroke Survivors Studied in Phramongkutklao Hospital

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Objective: *To study prevalence of depression in poststroke survivors in Phramongkutklao Hospital and factors associated with depression.*
Material and Method: *From 150 stroke survivors, therefor 101 patients who met inclusion criteria. These subjects were screened with Thai Geriatric Depressive Scale (TGDS) and interviewed. Demographic data that would effect depression were evaluated.*
Results: *During 9 months of studying period, 101 of 150 patients diagnosed with poststroke survivors were eligible. The prevalence of depression was 46.53%. Severity of depression were mild depression 20.79%, moderate 18.81% and severe depression 6.93%. There were no statistically significant among sex, diabetes mellitus, hypertension, smoking, hyperlipidemia, and site of stroke between depression and non-depression groups. Risk factors for severe poststroke depression were younger age, duration within one year after stroke onset and history of coronary artery disease.*
Conclusion: *The prevalence of poststroke depression was 46.53%. Risk factors of severe depression were younger age, duration within one year of stroke onset and history of coronary artery disease.*

Keywords: *Depression, Poststroke, Prevalence*

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Stroke patients have had more psychological symptoms than age and sex matched controls[1,2]. Depressive symptoms, anxiety and non-specific psychological distress are particularly common. Depression has been reported from 11% to 61% among stroke survivors[1,3]. This variation is due to differences in the definition between stroke onset and assessment, and selection of patients[4]. Community-based studies have produced more consistent results: the frequencies of major depression at one month after stroke were estimated to be 11% and 25% in studies from Oxford and Umea, respectively where as a a study from Perth, Australia estimated the frequency at 4 months after stroke as 15%[1,2,5].

History of previous depression, stroke severity, poor physical function and low social activity are the risk factors most consistently associated with depression after stroke[6,7]. Although the literature has been dominated by many small studies relating the lesion location with post-stroke depression, systematic reviews conclude that there is little or no evidence of such a relationship[8,9].

Several relatively short and simple questionnaires have been developed to detect depression and anxiety and some have been used in patients with stroke. Unfortunately, the response rates in patients with communication and cognitive difficulties are often low and none of the instruments has sufficient sensitivity and specificity to be recommended as a screening tool in clinical practice[10-12].

The objectives of this study to study were to search for the prevalence of depression in poststroke survivors in out patient clinic in Phramongkutklao Hospital and to find out factors associated with depression.

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Material and Method

This study was a cross-sectional study. Poststroke patients visiting in our neurologic outpatient

clinic during January-September 2005 were enrolled and interviewed for demographic and personal history. The study protocol and informed consent documents were approved by the ethical committee. Patients provided written informed consent before study.

Enrollment: Inclusion criteria were age 25 years or older who had ability to read and write. Exclusion criteria were patient with aphasia, alteration of consciousness, and being treated with antidepressant. Screening for depression: Train the brain forum group of Thailand consisting of 29 personals from 14 institutions in Thailand such as neurologists, psychiatrists, geriatricians, psychiatric nurses and psychologists had developed "Thai Geriatric Depressive Scale (GDS)" for screening depression. It had been tested for its validity of the questionnaire in general population age 60-70 years 275 cases (female 154 cases, male 121 cases) and found the validity in women was 0.9, and men was 0.91 and overall validity was 0.93[13]. This test was a brief and simple screening technique, specifically designed for using in outpatient clinic setting. It could be contributed to existing limitations in management interviewed by neurologist. This questionnaire composed of 30 items with a total score of 30. Interpretation of score was normal (0-12), mild depression (13-18) scores, moderate depression (19-24), severe depression (25-30).

Statistical analysis

The continuous data were assessed by mean, range and standard deviation (SD). The discrete data were assessed in number and percent. Chi-square test and Fisher's Exact test were determined the difference between depressed and no-depressed groups. Spearman correlation coefficient was used to study the correlation between lesion in the brain and CT or MRI brain to depression. P-value < 0.05 represented statistically significant. Statistical analysis was assessed by statistic program, SPSS version 11.5.

Results

Among 150 stroke survivors were enrolled but 101 cases were eligible. Patient demography was presented in Table 1. Average age was 60.69 $\pm$ 2.34 years, and mean duration of stroke was 14.88 $\pm$ 6.0 months. Male was 69 of 101 case (68.3%). Most common

Table 1. Demographic data of poststroke survivors

Variables	Number (101 cases)	percent
Average age (mean $\pm$ SD) (years)	60.69 $\pm$ 2.34	
Duration of stroke (mean $\pm$ SD)(months)	14.88 $\pm$ 6.02	
Male	69	68.3
Female	32	31.7
Occupation		
Officer	21	20.8
Business	12	11.9
agricultural	4	4.0
employee	10	9.9
Other	54	53.5
Marital status		
Married	79	78.2
Single	9	8.9
Divorce	12	11.9
Maid	1	1.0
Co-morbidity		
Diabetes mellitus	37	36.6
Hypertension	59	58.4
Smoking	31	30.7
Coronary artery disease	13	12.9
Hyperlipidemia	26	25.7
Neurosyphilis	11	10.9
Type of cerebrovascular disease		
Cerebral thrombosis	64	63.4
Cerebral hemorrhage	8	7.9
Cerebral embolism	3	3.0
Depression	47	45.2

Table 2. severity of depression and potential variables

Variables	Normal (54 cases)	Mild (21 cases)	Moderate (19 cases)	Severe (7 cases)	p-value
Age(years)	60.70 ± 3.4	63.81 ± 3.9	61.79 ± 3.48	48.29 ± 11.8	0.02
Duration after stroke onset (months)	16.30 ± 10.3	16.52 ± 10.7	12.21 ± 5.5	6.29 ± 6.2	0.008*
Male	39	11	13	6	0.281
Diabetes	15	10	6	1	0.649
Hypertension	34	13	9	3	0.529
Smoking	17	8	5	1	0.656
CAD	12	0	0	1	0.017*
Hyperlipidemia	16	5	5	0	0.408
Type of stroke					
Thrombosis	37	12	11	4	
Hemorrhage	2	1	2	3	
Embolism	2	0	0	1	0.164
Site					
Right	25	10	9	3	
Left	22	5	8	4	
both	7	1	2	0	0.728

$p < 0.05$ statistical significance

risk factors were hypertension, diabetes, smoking and dyslipidemia. Stroke subtypes were cerebral thrombosis 63.4%, hemorrhage 7.92% and embolism 2.97%.

Depression was found in 47 of 101 cases (46.43%); mild 21 (20.79%), moderate 19 (18.81%) and severe 7 (6.93%). Risk factors most consistently associated with depression after stroke were younger age ($p = 0.02$), duration from the onset of stroke to depressive illness within 1 year ($p = 0.008$) and previous coronary artery disease ($p = 0.017$). Patients with these risk factors had potential to be severe depression. Neither site of lesion nor type of stroke influenced depression (Table 2).

Discussion

From our series, post stroke depression (PSD) was identified of which was not different from the western groups 46.43%. Severe depression was found in the range of 6-12 months after stroke. Younger age seemed to have more severe depression. In the literature, 12-month prevalence of poststroke depression is about 30-70% (half are major depressive disorder, and the other half are minor depression). The peak incidence of PSD appears to be around 3-6 months after stroke. The prevalence of depression remains high even 1 to 3 years after stroke incidence.

Rehabilitation, in-patient, and outpatient settings have greater prevalence than the community setting. Half of stroke survivors who have major depression within the first 3 months remain depressed at 12, and 18 months[14]. Major depression after stroke lasts 1 to 2 years after stroke[15]. Patient with previous history of depression, alcohol dependence, genetic vulnerability, family history of depression would be proned to have stroke. Two large epidemiologic studies support this hypothesis. Individuals with history of previous depression have 2.6 times more likely to report a stroke than those without it during 13-year follow-up[16]. Relative risk of fatal stroke was 3.36 in men with depressive symptoms at baseline during 14-yr follow-up. However, depression is a frequent consequence of other non-neurological diseases and therefore depression after stroke may be a non-specific reaction to illness rather than due to the brain lesion itself. The etiology of mood disorders after stroke is bound to be multifactorial and post-stroke depression is probable not a discrete disease entity.

Our study very showed that poststroke depression was very common, so this would help the treating physicians to increase their awareness about this condition, causing a reduction in mortality and morbidity in longterm. Early detection and prompt treatment especially in such high risk patients for severe

depression would be required urgently.

Conclusion

Our study show that the prevalence of poststroke depression was 46.53% and potential risk factors of severe PSD were younger age, duration after the onset of stroke within one year, and previous coronary artery disease.

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ความชุกของภาวะซึมเศร้าในผู้ป่วยโรคหลอดเลือดสมองในโรงพยาบาลพระมงกุฎเกล้า

สามารถ นิธินันทน์, พาสิริ สิทธินามสุวรรณ, โยธิน ชินวลัญช์, วรรณา วงษ์เมฆ, สีมา ศุภเกษม, จิตถนอม สุวรรณเตมีย์

วัตถุประสงค์: *เพื่อศึกษาความชุกของภาวะซึมเศร้าในผู้ป่วยโรคหลอดเลือดสมองในโรงพยาบาลพระมงกุฎเกล้า และปัจจัยที่เกี่ยวข้องกับภาวะซึมเศร้า*

วัสดุและวิธีการ: *จากผู้ป่วยโรคหลอดเลือดสมองจำนวน 150 คน ผู้ป่วยมีคุณสมบัติตามเกณฑ์การคัดเลือกจำนวน 101 คน ได้รับการคัดกรองภาวะซึมเศร้าโดยใช้ Thai Geriatric Depressive Scale และทำการบันทึกปัจจัยพื้นฐานที่เกี่ยวข้องเพื่อประเมินหาความสัมพันธ์กับภาวะซึมเศร้า*

ผลการศึกษา: *ระยะเวลาของการศึกษานาน 9 เดือน ผู้ป่วยโรคหลอดเลือดสมองที่เข้าเกณฑ์การศึกษาจำนวน 101 ราย พบว่าความชุกของภาวะซึมเศร้าคือ ร้อยละ 46.53 แบ่งตามระดับความรุนแรงเป็น ซึมเศร้าเล็กน้อยร้อยละ 20.79 ปานกลางร้อยละ 18.81 และรุนแรงร้อยละ 6.93 ไม่พบความสัมพันธ์ระหว่างเพศ โรคเบาหวาน โรคความดันโลหิตสูง การสูบบุหรี่กับภาวะซึมเศร้า แต่ปัจจัยที่มีความสัมพันธ์กับภาวะซึมเศร้าระดับรุนแรงได้แก่ อายุน้อย ระยะเวลาที่เป็นโรคหลอดเลือดสมองภายใน 1 ปีแรก และประวัติโรคหลอดเลือดหัวใจ*

สรุป: *ความชุกของภาวะซึมเศร้าในผู้ป่วยโรคหลอดเลือดสมอง 46.53% ปัจจัยที่เกี่ยวข้องได้แก่ อายุน้อย ระยะเวลาที่เป็นโรคหลอดเลือดสมองภายใน 1 ปีแรก และประวัติโรคหลอดเลือดหัวใจ*