대한한의학회지 제28권 제2호(2007년 6월)
J Korean Oriental Med 2007;28(2):241-246

원 저

Acute Stroke in the Elderly Male
- Clinical Features, Stroke Subtypes, and *Sasang* Constitutions -

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Objectives : This study investigated stroke types, ischemic stroke subtypes, risk factors for stroke, stroke complications and Sasang constitutions in two groups divided by age according to the weakness of shingi (shenqi): younger (40 to 63 years) and older (= 64 years).

Methods : 165 male patients with acute stroke within 14 days onset were included, who were admitted to Kyunghee Oriental Medical Center from October 2005 to May 2007. Stroke types, ischemic stroke subtypes, risk factors for stroke, stroke complications and *Sasang* constitutions in two age groups were examined.

Results : Mean ages were 53.01±6.16 and 70.95±6.37 years for the younger 77 patients and older 88 subjects, respectively. There were no significant differences in stroke type, ischemic stroke subtypes, stroke complications and *Sasang* constitutions. Current smoking was more frequent in the younger age group (P= 0.005).

Conclusion : Age does not seem to influence stroke types, ischemic stroke subtypes, stroke risk factors (except current smoking), stroke complications or *Sasang* constitutions.

Key Words : Stroke, the weakness of *shingi(shenqi)*, old age

INTRODUCTION

Stroke is the second leading cause of death after cancer in Korea[1]. There are many risk factors for stroke. Age is the most important unmodifiable risk factor. For each successive 10 years after age 55, stroke rates more than double in men[2,3].

In traditional Korean Medicine (TKM), weakness of shingi (shenqi) is associated with aging. [Men's shingi (shenqi) starts to weaken at 40 years old and begins deteriorating rapidly from the age of 64.][4]. There are many studies on young adults (18-45 years) and very old subjects aged = 85 years[5,6], but few studies comparing younger patients with elderly using the weakness of shingi (shenqi) have been reported.

This study examined stroke subtypes, ischemic stroke subtypes, risk factors, stroke complications and Sasang constitutions in the two age groups (40 to 63 years and = 64 years).

SUBJECTS AND METHODS

This study was conducted in Kyunghee Oriental Medical Center from October 2005 to May 2007.

· 접수 : 2007년 5월 31일 · 논문심사 : 2007년 6월 1일
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· This work was supported by the Korea Science and Engineering Foundation(KOSEF) grant funded by the Korea government(MOST) (M10527010002-07N2701-00210).

All subjects were admitted to the above -mentioned hospitals with first-ever stroke within 14 days of onset. The diagnosis of stroke was based on clinical findings and neuroradiologic studies (brain computed tomography (CT) scan and/or magnetic resonance imaging (MRI)), which was confirmed by at least two or more experienced neurologists.

A total of 307 patients with stroke were recruited during the 19-months. They were divided into two age groups: aged 40 to 63 and = 64 years. We excluded 137 female patients and 5 male patients younger than 40 years; 165 patients were selected. All data were first coded on a single data sheet and that sheet was reviewed by at least two members of our team before being entered into the computerized data bank. This data sheet included various parts as follows.

1. Patient Identification

Patient's age, sex, citizen identification number, and date of admission were all recorded.

2. Sasang Constitution

The classification of Sasang constitution was made using questionnaire for the Sasang constitution classification II (QSCC II). We interviewed patients or caregivers with it during admission.

3. Risk Factors

Hypertension (HTN), diabetes mellitus (DM), atrial fibrillation (Af), cigarette smoking, ischemic heart disease (IHD), and hyperlipidemia were considered as possible risk factors for stroke. Patients were diagnosed during admission. Patients were considered as having: (a) DM if they had a past history of DM with current treatment; (b) hyperlipidemia if they had a past history of hyperlipidemia with current treatment; (c) HTN if they had a past history of HTN with antihypertensive medication; (d) smokers if they were current smokers; (e) IHD if they had a past history of IHD with current treatment; and (f) Af if they had a past history of Af with current treatment.

4. Stroke complications

Urinary tract infection (UTI), pneumonia, upper respiratory infection (URI), gastrointestinal (GI) bleeding, re-attack, and seizure were considered as stroke complications. Patients were observed during the admission period. (a) UTI if bacteria was observed on urine analysis with current treatment; (b) pneumonia if radiologists confirmed it on chest PA X-ray; (c) URI if patients complained of cough without pneumonia; (d) GI bleeding if gastroenterologist confirmed it on the gastroscopy (e) re-attack if patients had new neurologic deficits (f) seizure if patients had focal and/or general seizure.

5. Stroke Subtype Classification

Subtype classification for ischemic stroke was largely based on the modified TOAST classification[7,8].The subtypes were large-artery atherosclerosis (LAA), small-vessel occlusion (SVO), cardiac embolism (CE), stroke of other determined etiologies (SOD), and stroke of undetermined etiologies (SUE). Subtype classification for hemorrhagic stroke was rather simple. The subtypes were classified as ICH, intraventricular hemorrhage (IVH), and subarachnoid hemorrhage in accordance with anatomic topography.

6. Statistics

For statistical analysis, Windows SPSS package

was used. Independent t test was used for the comparison of continuous variables. The Chi-square test was used for analysis of noncontinuous variables. A p value less than 0.05 was the threshold of statistical significance.

RESULTS

Mean ages were 53.01±6.16 and 70.95±6.37 years for the younger and older groups, respectively. Sasangconstitutions, stroke risk factors, and stroke complications were summarized in table 1.

On the Sasang constitution classification, 6 among the 77 younger patients could not get a QSCC II test. Soyangin (33.8%) was the most common Sasangconstitution of the remaining 71 patients. The next ones were Taeyeumin (20.8%) and Soyeumin (5.2%). 32.5% could not be identified. In the older group, 8 among 88 patients could not get a QSCC II test . Soyangin (34.1%) was the most common Sasang constitution of the remaining 80 patients. The next ones were

Table 1. General Characteristics in the two age Groups

	Age Group, n (%)			p-value
	40-63 y (n=77)	≥64 y (n= 88)	All (n=165)	
Age, mean ± standard deviation	53.01±6.16	70.95±6.37		<0.000
Sasang constitution				
Soyeumin	4(5.2)	13(14.8)	17(10.3)	N.S
Taeyeumin	16(20.8)	7(8.0)	23(13.9)	N.S
Soyangin	26(33.8)	30(34.1)	56(33.9)	N.S
Taeyangin	0(0)	0(0)	0(0)	N.S
unidentified	25(32.5)	30(34.1)	55(33.3)	N.S
Risk Factors				
Hypertension	40(51.9)	37(42)	77(46.7)	N.S
Diabetes mellitus	25(32.5)	22(25)	47(28.5)	N.S
Atrial fibrillation	4(5.2)	0(0)	4(2.4)	N.S
Hyperlipidemia	3(3.9)	3(3.4)	6(3.6)	N.S
Ischemic heart disease	5(6.5)	3(3.4)	8(4.8)	N.S
Current smoking	50(64.9)	38(43.2)	88(53.3)	0.005
Stroke complication	4(5.2)	9(10.2)	13(7.9)	N.S
Urinary tract infection	2(2.6)	3(3.4)	5(3.0)	N.S
Upper respiratory infection	1(1.3)	1(1.1)	2(1.2)	N.S
Pneumonia	0(0)	1(1.1)	1(0.6)	N.S
Re-attack	0(0)	2(2.3)	2(1.2)	
Seizure	0(0)	1(1.1)	1(0.6)	N.S
Gastrointestinal bleeding	0(0)	1(1.1)	1(0.6)	N.S

Soyeumin (14.8%) and Taeyeumin (8.0%). 34.1% could not be identified.

Current smoking was the most important risk factor in 64.9% of 77 younger patients, which was followed by HTN (51.9%), DM (32.5%), IHD (6.5%), Af (5.2%), and hyperlipidemia (3.9%). Current smoking was the most important risk factor in43.2 %, which was followed by HTN (42%), DM (25%), IHD (3.4%), and hyperlipidemia (3.4%) in the older group. There was no significant difference in the stroke risk factors except current smoking ($p < 0.005$) between the two groups.

There was no significant difference in the stroke complications in the two groups.

As shown in table 2, stroke types and ischemic stroke types were similar in the two groups. 72 patients had cerebral infarction and 4 patients had cerebral hemorrhage in the younger group. 84 patients had cerebral infarction and 4 patients had cerebral hemorrhage in the older group. SAH was found in only 1patient in the younger group. There was no significant difference in the stroke types between the two groups. In terms of ischemic stroke subtypes, SVO was the most common type, as it comprised 57% and 73.9% for the younger and older groups, respectively. The next common types were LAA (14.3%), SUE (6.5%), and CE (5.2%) in the younger group, whereas the next ones were LAA (15.9%), SOD (5.7%), and SUE (4.5%) in the older group. Distribution of subtypes was not significantly different between the two age groups

DISCUSSION

The subtypes and risk factors of stroke have been extensively studied among young adults but not in older ones, who constitute the majority of stroke victims. Furthermore, the classification of age distribution was just =85 years or 55 to 70 and 71 to 85 years. In the present study,two age groups were divided according to the extent of shingi (shenqi)'s weakness. The one was 40 to 63 age group and the other = 64 years group. Men's shingi (shenqi) starts to weaken from 40 years and deteriorates more and more after 64 years.

Table 2. Stroke Subtypes in the two age Groups

	Age Group, n (%)			p-value
	40-63 y (n=77)	≥64 y (n= 88)	All (n=165)	
Stroke type				
Cerebral infarction	72(93.5)	84(95.5)	156(94.5)	N.S
Cerebral hemorrhage	4(5.2)	4(4.5)	8(4.8)	N.S
Subarachnoid hemorrhage	1(1.3)	0(0)	1(0.6)	N.S
Ischemic stroke type				
Large artery atherosclerosis	11(14.3)	14(15.9)	25(15.2)	N.S
Cardioembolism	4(5.2)	0(0)	4(2.4)	N.S
Small vessel occlusion	57(57)	65(73.9)	122(73.9)	N.S
Stroke of other determined etiology	0(0)	5(5.7)	5(3.0)	N.S
Stroke of undetermined etiology	5(6.5)	4(4.5)	9(5.5)	N.S

Thus, we focused on male patients because shingi (shenqi) is not referenced in women.

In the diagnosis of Sasang constitution, Soyangin was the most common in both age groups. These results were similar to other reports[9,10]. Taeyeumin was the second in the 40 to 63 years groups whereas Soyeumin was the second most common in the =64 years group. However, there was no significant difference between the two groups; age does not seem to affect Sasangconstitution.

The two age groups did not differ significantly with regard to the distribution of stroke types and ischemic stroke subtypes. Age does not seem to influence stroke type and ischemic stroke subtype distribution. Most patients were diagnosed as cerebral infarction in the two groups. Among the 165 acute stroke patients, ischemic stroke was observed in 94.5%. Hemorrhagic stroke only occurred in 4.8%. This result was much lower than other results reported in Korea[11,12,13]. This may be explained by the fact that many patients diagnosed as hemorrhagic stroke were managed by neurosurgeons. In the diagnosis of ischemic stroke. subtypes, we used TOAST classification. Small vessel occlusion in the two age groups was the most common stroke subtype, though large artery atherosclerosis was a common stroke type in other reports[12]. This may be because stroke patients with milder neurological deficits visit TKM hospitals.

Among the stroke risk factors, smoking was the most important among the two age groups, followed by HTN and DM. This may be in part because of the high smoking rate among Koreans. There was no significant difference except current smoking between the two age groups. These results are similar to other reports[12]. This may be due to more frequent exposure to stress in the younger age group. Thus, it is necessary to aggressively discourage smoking among those aged 40 to 63 years.

In the stroke complications, there was no significant difference between the two age groups. Age does not seem to affect stroke complications. Urinary tract infection was a common complication. This may be because older patients are more subject to infection than younger.

In conclusion, there was no significant difference in stroke types, ischemic stroke subtypes, Sasangconstitutions, stroke complications, or stroke risk factors except current smoking between the two age groups.

In this study, there were some limitations. This was not a population-based study but a hospital-based study. The subjects were too few to draw a concrete conclusion. Further population-based and larger-scaled study will be needed.

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