

Original Article

A Clinical Study of Korean Medical Treatment and Korean and Western Medical Treatment on Acute Ischemic Stroke Patients

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Objectives : This is a study of ischemic stroke patients designed for comparing Korean and Western medical treatments and Korean medical treatments alone.

Methods : 44 patients were diagnosed by B-MRI scan as having suffered ischemic stroke. They had entered Dong-eui Korean Medicine hospital within seven days of attack, and remained over seven days, all between May 2005 and October 2007. Patients were divided into two groups; a group treated with Korean medical treatments, and another group treated with Korean and Western medical treatments (but in both groups examinations were done and Western medications were given for hypertension, diabetes mellitus and so on)

Results : NIHss change one month later was not statistically significant for either groups but the NIHss gap between them was significant.

Conclusions : NIHss change one week later was not statistically significant for either group.

NIHss change one month later was not statistically significant for either groups but the Korean medical treatment group had a significant NIHss gap more than the Korean and Western medical treatment group.

Key Words : Ischemic stroke, Combined Korean and Western Treatment, Korean Medical treatment, National Institute of Health stroke scale (NIHss)

Introduction

Stroke is one of the three major causes of death around the world and it has been the second highest cause of death after malignant neoplasm in Korea for the past few years¹. Western medicine classifies the disease into ischemic stroke, cerebral hemorrhage, transient

cerebral ischemia, hypertensive encephalopathy, and others². The clinical manifestations vary across body and mind depending on the impaired parts, and they range from disorders of consciousness, movement, perception, visual, speech and language faculties, the nervous system, and convulsions, in addition to others. The risk of death is high since symptoms worsen very rapidly from the onset of a stroke. Furthermore, even when it does not lead to death, it causes severe inconvenience to the patients themselves and their families in their daily lives due to neurological damage, and the other sequelae mentioned above³. Recent studies⁴⁻⁶ found that

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ischemic stroke accounts for around 80 % of current strokes and cerebral hemorrhages for about 20 %. There are increasing attempts to enhance treatment efficacy by applying both Korean and Western medical treatments as part of an effort to raise the success rate of treating cerebral apoplexy. In addition, research has been conducted⁷⁻⁸⁾ on wholly Korean medical treatments as well as a combination of Korean and Western medical treatments. However, each study lacked a sufficient number of samples and the relative seriousness of stroke was not taken into consideration, calling for further sophisticated research. With this information in mind, this study was initiated based on Mr. Kim's research⁸⁾ conducted from May 2005 to March 2006. The research targeted 44 acute ischemic stroke patients who were hospitalized and treated in Dong-Eui Medical Center from May 2005 through October 2007. The sample was divided into two groups: (1) Korean medical treatment; and (2) a combination of Korean and Western medical treatments. For each group, patient age, gender, type of ischemic stroke, and National Institutes of Health stroke scale (NIHss) were recorded and the two groups' clinical presentation and NIHss progress were compared for analysis.

Research Object and Method

1. Research Object

The research targeted patients who were hospitalized and treated at Dong-Eui Medical Center from May 19, 2005 through October 31, 2007. The research deployed sample selection criteria as follows. First, it selected 139 patients confirmed as being stricken with acute ischemic stroke through an MRI brain scan of patients

admitted to the hospital within seven days after symptoms occurred. Out of this group, patients who met either of the conditions below were eliminated. Afterwards, a final group of 44 people were chosen who received treatment in the hospital for a month. The finalists were broken up into two groups: (1) Korean medical treatment; and (2) a combination of Korean and Western medical treatments.

The disqualifying conditions were as follows:

- 1) When discharged from the hospital or moved to another clinic while conditions were improving
- 2) When ischemic stroke recurred in the middle of treatment
- 3) When cerebral hemorrhage occurred in the middle of treatment
- 4) When moved to another clinic because of other diseases in the middle of treatment
- 5) When changing from Korean medical treatment to a combination of Korean and Western medicine treatments according to the will of patients or their caregivers
- 6) When exceeding 10 on the NIHss in the first examination

2. Treatment Method

For Korean medical treatment, herbal medicine (decoction, extract, etc.) and acupuncture therapies were applied according to symptoms. As for Western medical treatment, oral thrombolytic drugs were administered in consultation with the hospital's neurology department.

3. Evaluation Method

A patient's symptoms and conditions were quantified by using the NIHss which has been certified as an objective yardstick for a stroke's

neurological symptoms.

4. Examiners and Evaluated Items

Internal medicine specialists played a role as examiners. They assessed the stroke's underlying causes, impaired parts, type, impaired blood vessels, and NIHss at a certain time (at the time of hospitalization, one week later, and a month later) through the patients' charts and NIHss records.

5. Data and Statistical Analysis

SPSS 12.0 for Windows was used to analyze the research outcome. To compare measured values before and after treatment between the two groups, a non-parametric test named Mann-Whitney U test was used. When P value is less than 0.05, it was regarded to be statistically significant.

Results

1. Patient Distribution by Group, Age, and Gender

Out of 44 patients, 23 belonged to the oriental medical treatment group (52.27 %) and 21 to a combination of oriental and Western medical treatment group (47.73 %). The ages ranged from 40 to 90 years old. The average age of the first group was 65 while that of the second group was 67. Regarding gender distribution, group one had 11 men and 12 women (47.82 % and 52.18 % respectively) while group two had 9 men and 12 women (42.86 % and 57.14 %) (see Table 1).

2. Ischemic Stroke's Predisposing Distribution

This research classified five underlying causes of ischemic stroke: over-work, stress, diet, drink,

Table 1. Distribution of Age and Gender

			Gender		Total	Percentage
			Male	Female		
Korean Medicine Treatment Group	Age (years)	40~49	1	0	1	4.34%
		50~59	1	2	3	17.39%
		60~69	5	4	9	39.13%
		70~79	3	5	8	34.78%
		80~	1	1	2	8.70%
		Total	11	12	23	100.00%
		Average	65.55	67.67	66.65	
Standard deviation	11.89	9.67	10.73			
Korean -Western Medical Treatment Group	Age (years)	40~49	1	0	1	4.76%
		50~59	3	1	4	19.05%
		60~69	5	4	9	42.85%
		70~79	0	3	3	14.29%
		80~	0	4	4	19.05%
		Total	9	12	21	100.00%
		Average	58.11	73.67	67.00	
Standard deviation	7.34	9.19	11.41			

Table 2. A Leading Reason of Distribution of Ischemic Stroke

Cause	Number	Percentage(%)
Over-work	13	29.55
Stress	27	61.36
Unknowned	3	6.82
Bad eating habit	0	0
Alcohol	1	2.27
Total	44	100.00

and unknown causes. The distribution was 34.07 %, 39.56 %, 12.09 %, 1.10 %, and 13.19 % respectively (see Table 2).

3. Sub-groups Ischemic Stroke by Lesion Part

1) By lesion, ischemic stroke occurred on the order of basal ganglia/internal capsule, corona radiata, pontine, cortex, and thalamus (see Table 3).

2) By blood vessel, ischemic stroke took place on the order of MCA, basilar artery, PCA, border-zone, and AICA (see Table 4).

4. Improvement Comparison of the Two Groups

The author analyzed how the patients recov-

ered their neurological functions by recording their NIHss at the time of hospitalization, one week later, and one month later.

1) NIHss Improvement for both groups one week later

As for the oriental medical treatment group, NIHss improvement one week after hospitalization was -0.304 on average with a P value of 0.307, showing no statistically significant change.

The group combined oriental and Western medical treatment averaged -1.095 with a P value of 0.057, which was not statistically significant either. The improvement gap between the two groups was -0.791 on average and the P value was higher than 0.05. Thus, the author came to the conclusion that there was no

Table 3. The Distribution of Damaged Region of Ischemic Stroke

Region	Number	Percentage
BG/IC	20	45.45%
Corona Radiata	8	18.18%
Cortex	6	13.64%
Thalamus	2	4.55%
Midbrain	0	0.00%
Medulla	0	0.00%
Pontine	8	18.18%
Cerebellum	0	0.00%
Multiple Territory	0	0.00%
Total	44	100.00%

Table 4. The Distribution of Damaged Artery of Ischemic Stroke

Artery	Number	Percentage
Border-zone	1	2.27%
MCA	31	70.45%
PCA	4	9.09%
ACA	0	0.00%
Basilar	7	15.90%
Vertebral	0	0.00%
AICA	1	2.27%
PICA	0	0.00%
ICA	0	0.00%
SCA	0	0.00%
Multiple territory	0	0.00%
Total	44	100.00

statistically significant gap between the two groups (see table 5).

2) NIHss Improvement for both groups one month later

Regarding the first group, average NIHss progress one month after being admitted to the hospital amounted to 0.478 with the P value at 0.102, indicating no statistically significant

development. With the second group, the corresponding NIHss figure stood at -0.333 with P value at 0.579, again showing no significant change. The progress gap between the groups remained at 0.697 on average and the P value was lower than 0.05. Therefore, one can say that the two groups' improvement gap is statistically significant and the oriental medical treatment group outperformed the other group (see table 6).

Table 5. The Change of NIHss After 1st Week

1st Week	N	Admission	1st Week	Average	Standard Deviation	P
Korean Medicine Treatment Group	23	4.261	4.565	-0.304	1.396	0.307
Korean and Western Medical Treatment Group	21	4.619	5.714	-1.095	2.488	0.057
Comparison				-0.791		0.529

Table 6. The Change of NIHss After 1st month

1st Month	N	Admission	1st Month	Average	Standard Deviation	P
Korean Medicine Treatment Group	23	4.261	3.783	0.478	1.344	0.102
Korean and Western Medical Treatment Group	21	4.619	4.952	-0.333	2.708	0.579
Comparison				0.697		0.022

Consideration

As life expectancy has increased in modern society, the aged population has grown and senile diseases have increasingly taken proportion of total health care. Accordingly, Korean medicine has paid more attention to treating senile diseases and as a result the number of oriental clinics and related personnel has risen along with the usage rate of oriental health care centers⁹⁻¹⁰. Growing demand for oriental healthcare has increasingly expanded the coverage of oriental medical treatment. In particular, stroke is the disease where Korean medicine accounts for greater percentage in its healthcare than other forms of medicine compared with other diseases. Given the fact that the first and second most frequent diseases found in patients hospitalized in oriental clinics is stroke sequela and apoplexy⁸, it is fair to say that oriental clinics' stroke treatment contribute greatly to national healthcare. According to a series of research studies⁴⁻⁶, ischemic stroke and cerebral hemorrhage account for 80 % and 20 % respectively of onset frequency of stroke. The research also found that patients with cerebral hemorrhage often need to receive active surgical therapy depending on their conditions so they usually get treatment in Western medical hospitals. Meanwhile, stroke patients cared for at oriental clinics usually get conservative treatment and most of them are admitted after ischemic stroke which is less dependent on Western medical treatment compared to cerebral hemorrhage⁶. This research focused on ischemic stroke patients as they are mainly cared for by oriental clinics and focused on index cases who were admitted to the Dong-Eui Medical Center within a week after onset. Then, the target patients were classified into two groups: the first

group received only oriental medical treatment without being administered with thrombolytic drugs in consultation with the internal medicine department of Dong-Eui Western medical hospital; the second group received both thrombolytic drugs and oriental medical care. Their conditions were assessed through the NIHss at the time of hospitalization, and again one week and one month after hospitalization. The NIHss shows stroke patients' neurological condition by comprehensively evaluating their overall consciousness, consciousness of order and questions, orientation, any language disorder, stomatolalia, movement disorder, and sensory disorder. Its relevance and credibility were already proven and is most widely used as a parameter of a stroke's neurological manifestation¹¹.

In this study, the age group which is most stricken with ischemic stroke was of those in their 60s for both groups and the finding is similar with what previous researchers have discovered¹²⁻¹³.

Other researchers^{8,14} reported that stress is the most frequent underlying cause of ischemic stroke, which coincides with the findings of this research. As such, stress is a top predisposing factor of ischemic stroke.

Similar to the research by Mr. Jun¹⁵, this research reconfirmed that the middle cerebral artery is the main part affected by ischemic stroke.

For the two target groups, the research compared NIHss improvement at certain points: at the time of hospitalization vs. one week later; at the time of hospitalization vs. one month later; one week later vs. one month later. One week after hospitalization, NIHss worsened for both groups: it averaged -0.304 with a P value at 0.307 for the former; it stood at -1.095 on

average with P 0.057 for the latter, both with no statistical significance. The NIHss improvement gap between the two groups was not statistically significant with a P value of 0.529. It seems that the reason why the NIHss slightly deteriorated is that observation was done at the acute phase of ischemic stroke¹⁶⁾ when neurological impairment accelerates.

Likewise, the NIHss improvement one month later was not statistically significant for either group: the NIHss averaged 0.478 and P was 0.102 for the former; corresponding figures for the latter were -0.333 and 0.579 respectively. However, when it comes to the NIHss improvement gap between the two groups, P was 0.022, suggesting the first group showed significant progress compared to the second group.

When comparing this research with other previous studies, there are differences in findings. To start with, Mr. Kim's research⁷⁾ discovered that both the oriental medical treatment group and the group with a combination of oriental and Western medical treatments showed significant NIHss progress two weeks after hospitalization. In the author's previous research⁸⁾ as well, the oriental medical treatment group significantly improved. The author believes that the discrepancy was caused as Mr. Kim's study⁷⁾ didn't separate ischemic stroke from cerebral hemorrhage, used different samples from this research, and assessed NIHss two weeks later while it was done one month later in this research. As for the author's previous research, the sample size was smaller than in this study.

Currently, ischemic stroke patients are receiving both oriental and Western medical treatments at many oriental clinics across the nation. As they get therapy from both oriental and Western clinics for the same illness, the

combined treatment incurs more economic burden on patients than a single treatment whether it to be oriental or Western. As this research found oriental medical treatment is more beneficial than the combined treatment, there is a need to expand the sample size for each target group and conduct additional comparisons between them. Also, future research needs to compare improvement with another target group (Western medical treatment only) so as to enhance treatment for ischemic stroke.

In addition, the NIHss used in this research is a rapid and objective barometer of initial stroke patients' consciousness and any abnormal condition of the central nervous system. However, since the NIHss is not appropriate to evaluate improvement from the perspective of Korean medicine, the author believes there should be additional research to assess patients' progress by using Korean medicine's dialectic indicator.

Conclusion

1. NIHss change one week later was not statistically significant for either group.
2. NIHss change one month later was not statistically significant for either groups but The Korean medical treatment group had significant NIHss gap than the Korean and Western medical treatment group.

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