Original Article

FEATURES OF COGNITIVE IMPAIRMENT IN STROKE PATIENTS AND THEIR ADEQUATE TREATMENT

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Abstract

Among the many complications of stroke, one of the most frequent, but little studied, is cognitive impairment. In order to study the prevalence and severity of cognitive impairment in post-stroke patients, 80 stroke patients were examined according to a special scheme. The results showed that 82.5% of these patients had neuropsychological signs of cognitive impairment, and in 65% of them the phenomena were of mild and moderate severity of cognitive impairment, especially the function of attention. The authors come to the conclusion that in the treatment of stroke against the background of basic therapy, it is necessary to carry out adequate therapy.

Keywords: stroke, cognitive disfunction, cerebral blood circulation.

INTRODUCTION

Poststroke cognitive impairment and dementia is a major source of morbidity and mortality after stroke worldwide. An acute violation of blood circulation in the brain takes the leading place among cardiovascular diseases and causes the occurrence of many complications. One of these complications is cognitive impairment. Patients can treat the consequences of acute cerebrovascular accident, but the cognitive impairment that occurs after this pathology makes it difficult for the patient to return to his previous healthy life. Cognitive function is the ability to understand the world and respond to it adequately. Cognitive changes range from focal deficits resulting from decreased perfusion in the stroke site and surrounding tissues to varying degrees of cognitive impairment. Such a change in the activity of the brain is often caused by cerebrovascular diseases with the formation of various foci in the white matter of the brain. Changes in the structure of the white matter of the brain in stroke cause a violation of the activity of conducting fibers. Therefore, brain neuroimaging findings are important in evaluating cognitive changes. In many studies, the features of the development of dementia in chronic cerebral ischemia are well covered, and in-depth study of the role of stroke in the development of cognitive impairment and dementia can reduce the causes of the origin of this pathology. Determining the characteristics of cognitive changes after a stroke and carrying out adequate treatment measures, the use of the Cytoflavin for the purpose of treatment leads to an improvement in the quality of life of patients who have suffered a stroke.

The purpose of the study. Determining the characteristics and severity levels of cognitive impairment, such as lack of attention in stroke patients and improving their treatment system.

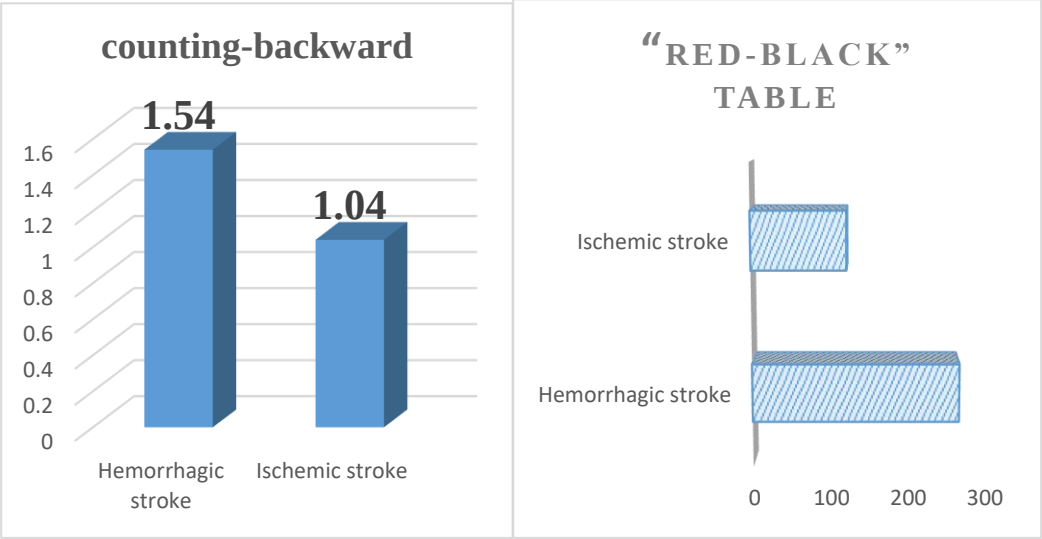
Materials and methods.

103 patients with stroke were examined for research purposes. 62 patiens of main group were suffered with ischemic stroke and other 41 patients with hemorrhage stroke. 41 patients were selected as a control group and was carried out standard therapy. The avarage age of the patients of main group was 62.2 ± 0.8 and 59.7 ± 1.2 in control group. The patients of second group were treated only with standart therapy of stroke and the main group patients received Cytoflavin 10.0 intravenously, 1 time per day for 10 days in addition to the standart basic treatment. Patients of both groups were comparable in terms of sex, age, initial clinical picture. Patients' condition was assessed in 1, 5, 10–20 days of treatment (upon discharge from the hospital).

They were exemined by neuropsycological tests such as subtraction from 100 to 7 and “red-black” table. This counting-backward test is used to evaluate the stability of attention. The test consists of successively subtracting the same number from 100 (for example, 7). Patients are instructed to count silently while performing the test and only say aloud the next subtracted number. There are two types of mistakes identified during the test, first-error score and the reverse-effect index. The following tests were used to assess memory function. The latter technique is used to assess the distribution and variability of attention. The study is carried out using special blanks showing 25 red and 24 black numbers. At the first stage patients should find the black numbers in ascending order, then the red numbers in descending order. The third task is to find both black numbers in ascending order and red numbers in descending order. The the time which takes to complete each task are recorded. During data processing, the execution time and errors of each task are taken into account. The time for the third task is not equal to the sum of the time spent on the first and second, because part of the time is spent on switching attention and storing the numbers mentioned earlier in the brain. The difference between times values is considered as the attention switching time, and it determines the time (in seconds) it takes to move from one row of numbers to the other. The smaller the difference, the better the attention.

Changes in attention function in poststroke patients

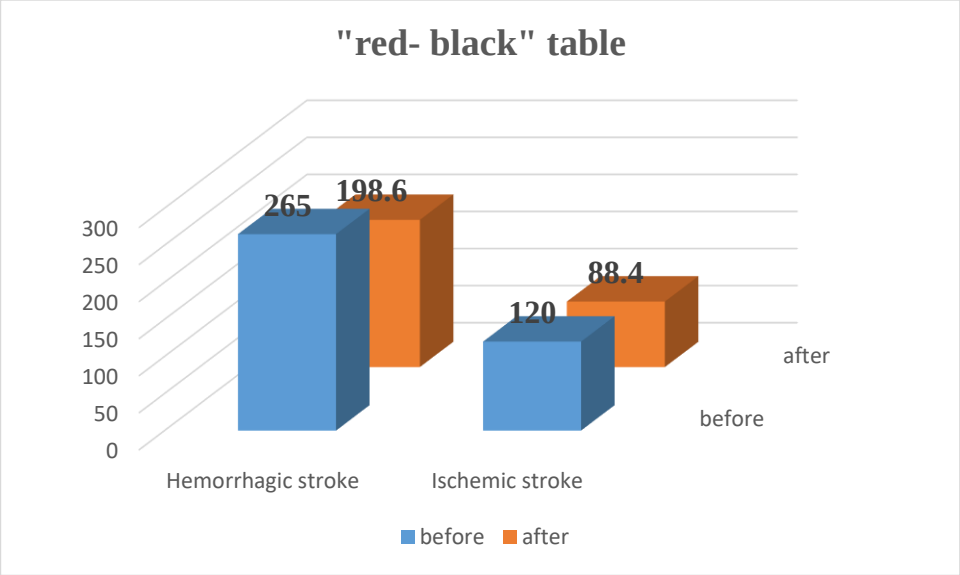
Tests	Hemorrhagic stroke	Ischemic stroke
counting-backward	1,54±0,57	1,04±0,12
“red-black” table.	265,00±44,0339	120,84±37,9575



In the second phase of the study, patients received Cytoflavin 10.0 intravenously 1 time per day for 10 days. Then patients were re-examined through neuropsychological tests.

According to the results of "red-black table" test, it was found that the stability of attention in patients increased and, as a result, the time of shifting attention decreased ($p<0.05$). A positive result was observed in 22.6% of patients of group I, 19.3% in group II.

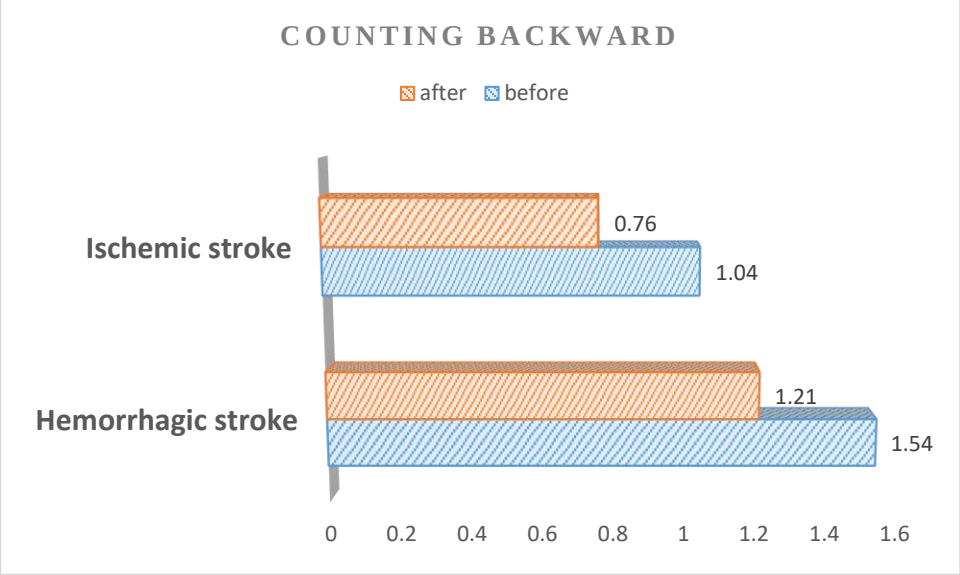
Figure 2



Thus, after the treatment, the patient's attention improved, and their mental capabilities expanded significantly.

By analyzing the results of the "counting-backward" test, the errors in group II significantly decreased ($p<0.05$). These changes showed that the dysfunction of the frontal-occipital-temporal parts of the brain was more common in this group of patients.

Figure 3.



Conclusion.

Neuroprotective and neurometabolic therapy with using Cytoflavin in treatment plays an important role for both in the acute and in the recovery period of a stroke, which contributes to effective recovery of impaired neurological functions, especially function of attention improves significantly. Eventually it improves the quality of patient's life.

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