



Study of Clinical and Neurological Features of Lacunar Stroke

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Annotation. 52 patients with ischemic stroke were examined. The patients were divided into 2 groups. Patients in the first group were patients with ischemic stroke and lacunar foci were confirmed on MRI. Second group was the comparison group with ischemic lacunar foci. All patients underwent a complete neurological examination and the significance of lacunar foci was studied.

Keywords: lacunar stroke, hypertension, MRI

INTRODUCTION

The problem of cerebral blood vessels is of great medical and social importance. More than 15 million people worldwide are affected by vascular diseases every year. The prevalence of cerebrovascular diseases among the population of different ages and genders (strokes affect more than 15 million people in the world every year), high mortality (up to 40% in one year), the problem of cerebral stroke continues to be of great medical and social importance, and the high frequency of disability among survivors, primarily among those of working age, is an urgent problem [2,11]. Stroke is the second leading cause of death worldwide. It affects approximately 13.7 million people and causes approximately 5.5 million deaths each year. Approximately 87% of strokes are ischemic infarcts, which has increased significantly between 1990 and 2016, which is associated with reduced mortality and improved clinical interventions [5,12]. Between 1990 and 2016, the incidence of stroke doubled in low- and middle-income countries, but fell by 42 percent in high-income countries over the same period. According to the Global Risk of Disease Study (GBD), although the incidence of stroke has decreased, the age, gender, and geographic location of those affected mean that the socioeconomic risk of stroke has increased over time [5]. Age-related stroke: The frequency of stroke increases with age, doubling after age 55. Between 1990 and 2016, stroke in people aged 20-54 increased from 12.9% to 18.6%. Nevertheless, the age-specific mortality rate decreased by 36.2% during the same period [3,5,9]. According to many multicenter studies, ischemic damage of the brain is common among cerebrovascular diseases (70-85%), of which 15-30% is cerebral lacunar infarction (LI) [4,6]. LI are small brain infarcts (up to 15 mm in diameter), 80% of which are located in the periventricular region, basal ganglia and thalamus, and 20% in the brain stem and cerebellum. Their development is associated with damage to small (diameter 40-80



µm) perforating branches of front, middle, back and basilar arteries. In foreign literature, diseases related to the pathology of small cerebral arteries are grouped under the heading "Cerebral small vessel disease". In recent years, the term "cerebral microangiopathy" (SMA) has been used in local literature [1,10,11]. The most important neuroimaging marker of SMA is numerous "hyperintense foci", leukoaraiosis phenomenon and diffuse white matter pathology on MRI (in T2 and FLAIR modes) [8]. Lacunar stroke can sometimes be asymptomatic and is detected only during neuroimaging examination. The appearance of many lacunar foci increases the risk of developing a large stroke. Determining signs of lacunar stroke formation allows prevention and rehabilitation of major stroke in these patients.

The purpose of the study.

To study the specific course of clinical and neurological features in patients with lacunar strokes.

Research material and methods

For examination, 52 patients from the acute period of hospitalized ischemic stroke were observed in the neurology department of TTA clinic 1 in 2023. Patients were studied in groups of 2 according to the outcome of the MRI examination. Group 1 has 28 patients the main Group (AG) are patients with lacunar foci with ischemic stroke. Group 2-24 comparison group (TG) patients with ischemic stroke who do not have lacunar foci. The average age of patients in Group 1 was 59(4.5). Of this, males constituted 57.14% and females 42.86%. The average age of Group 2 patients was 59.2(1.01) with males accounting for 66.7% and females 33.3%. All patients underwent clinical neurological and neovascularization testing. All patients were tested for MRI and cases with LI sizes ranging from 0.5 to 1.5 cm were analyzed. Changes in higher nerve activity were evaluated on the MMSE scale.

Results and Discussions

The results of the research showed that patients in group 1 patients. Stroke was observed in 10 (35.7%) patients in the area of the left middle cerebral artery, in 12 (42.8%) patients in the area of the right middle artery, in 4 (30.5%) patients in the left posterior artery. In 2 (7.14%) patients, it was observed in the area of the right posterior artery. Neurological changes in the main and comparison group patients with ischemic stroke (in percentages)

Symptoms	Main	Comparison
The number of patients is	28	24
Nystagmus	14.28	16.67
Eyeball movement disorder	3.57	4.16
CN 7 pairs of central paralysis	100	100
CN 12 pairs of central paralysis	100	87.5
Bulbar syndrome	0	0
Hemiparesis	64.28	83.3
Hemiplegia	0	0
Pathological reflex	89.28	91.66
Oral automatism	85.71	79.16
Hemigipesthesia	57.1	45.83
Coordination disorder	28.77	12.5
Motor aphasia	14.28	33.3
Sensorimotor aphasia	21.42	8.33
Dysfunction of sexual organs	21.4	12.5
Cognitive disorders	57.1	45.83

Stroke in 10 patients (35.7%) with hypertension and type 2 diabetes, 8 (28.57%) with hypertension, 8 (28.57%) with hypertension and cerebral atherosclerosis, 2 (7.14%) with hypertension. Cerebral atherosclerosis and type 2 diabetes mellitus were caused by the combination. Also, 12 (42.85%) of the patients had a stroke for the first time, and 16 (57.1%) had a repeat stroke.



Neurological changes:

Visual impairment 6 (21.4%), nystagmus 4 (14.28%), damage to the 7th pair CN 28 (100%), damage to the 12th pair CN 28 (100%), movement disorder 18 (64.28%), pathological reflexes in 25 cases (89.28%), oral automatism reflex in 24 cases (85.71%), sensory changes in 16 cases (57.1%), coordination disorder -8 cases (28.77%), motor aphasia -4 cases (14.28%), sensorimotor Aphasia was observed in 6 (21.42%), organ dysfunction in 6 (21.4%), cognitive disorders in 16 (57.1%) patients. In the MRI examination, it was found that there are few foci of LI in patients with primary stroke, and there are many foci in patients with recurrent stroke.

In group 2, stroke was observed in 45.83% in the left middle artery, 33.3% in the right middle artery, 2.08% in the anterior artery, 2.08% in two arterial basins, and 12.5% in the vertebrobasilar basin. Stroke in 18 patients (75%) with hypertension and cerebral atherosclerosis, 2 (8.33%) with hypertension, 2 (8.33%) with hypertension and type 2 diabetes, 1 (4.16%) with HD+ kingking It was found that 1 (4.16%) was caused by SAG. Neurological changes: nystagmus 4 cases (16.67%), damage to the 7th pair of CN 24 cases (100%), damage to the 12th pair of CN 21 cases (87.5%), movement disorder -20 cases (83.3%), sensory loss changes 11 (45.83%), pathological reflexes 22 (91.66%), oral automatism reflex 19 (79.16%), coordination disorders - 3 (12.5%), motor aphasia - 8 (33.3%), sensorimotor aphasia was observed in 2 (8.33%), organ dysfunction in 3 (12.5%), cognitive disorders in 11 (45.83%) patients. 21 (87.5%) of the patients had a stroke for the first time, 3 (12.5%) had a repeat stroke.

CONCLUSION

1. The main risk factor for the occurrence of lacunar foci in the brain is hypertension. Its co-occurrence with other diseases, cerebral atherosclerosis, and diabetes mellitus increases the risk of large strokes. If there is a history of lacunar stroke, repeated stroke occurs. the risk of exit also increases.
2. LI ischemic stroke patients have more impairment of cognitive functions compared to those without lacunar foci.
3. Timely detection of LI allows to prevent and rehabilitate a major stroke in these patients.

Consent for publication - The study is valid, and recognition by the organization is not required. The author agrees to open the publication.

Availability of data and material – Available.

Competing interests – No.

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