

CEREBROVASCULAR PATHOLOGY IN PATIENTS WITH ISCHEMIC HEART DISEASE (NEUROIMAGING RESULTS)

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INTRODUCTION & AIM

The aim of this study was to assess the neurological status and the condition of the brain in patients with ischemic heart disease.

METHOD



We examined 170 patients, all men and middle age, with an average age of 58.6 years. All of them passed a neurological examination and a Mini-mental State Examination (MMSE) test. The brain examination was performed with the multi-spiral computer tomograph “Somatom Sensation 64 Siemens” (Germany). On a native multi-detector computed tomography (MDCT) of the brain, the ventriculocranial index Evance, the width of ventricle III, and the presence of leukoaroyosis, cysts, and gliosis were estimated.

Table 1. Pre-operative clinical characteristics

Variable	Patients, n= 175
Age, years	55,8±5,64
Years of study	11,0±2,12
History of arterial hypertension, years	5,77±4,63
History of angina, years	4,77±4,40

Table 2. Clinical characteristics of patients

Variable	Patients, n = 135		p
	Before surgery	Five years follow-up	
Angina, n (%)			
I – II, n (%)	75 (55,6)	28 (20,9)	0,0000
III, n (%)	53 (39,3)	4 (3,0)	0,0000
Chronic heart failure (FC by NYHA)			
I – II, n (%)	106 (78,5)	132 (97,8)	0,0000
III, n (%)	29 (21,5)	3 (2,2)	0,0000
Heart attack before surgery, n (%)	96 (71,1)	101 (74,8)	0,6
Carotid stenosis, n (%)	49 (36,3)	65 (48,2)	0,04
Diabetes mellitus, n (%)	19 (14,0)	35 (25,9)	0,01

RESULTS & DISCUSSION

The frequency of vestibulopathy syndrome was 24%, that of asthenia syndrome was 56%, that of mild cognitive impairment was 46%, and the average of the MMSE test results was 27 [26; 28] points.

The width of ventricle III was 7.6 ± 2.0 mm, the ventriculocranial index Evance was 3 – 4.2%, leukoaroyosis was found in 26% of the patients, signs of cortical atrophy were found in 19% of the patients, and cysts were found in 5% of the patients.

The average age of our patients was no more than 60 years, but the width of ventricle III corresponded to the expected values for the age category of healthy persons over 60 years old, and the values of the ventriculocranial index Evance corresponded to the age norms for healthy subjects over 70 years old.

Table 3. Morphometric brain

Parameter	Before surgery	Five years follow-up	p
Ventricular width III, mm	7 [5,5; 8,0]	7,5 [6,2; 9,1]	0,03
Ventriculocranial index 3, %	4,0 [3,8; 4,7]	4,2 [3,6; 4,8]	0,8
Cysts, gliosis, n (%)	6 (4,4)	31 (23,0)	0,0001
Leukoaroyosis, n (%)	33 (24,4)	97 (71,8)	0,0001

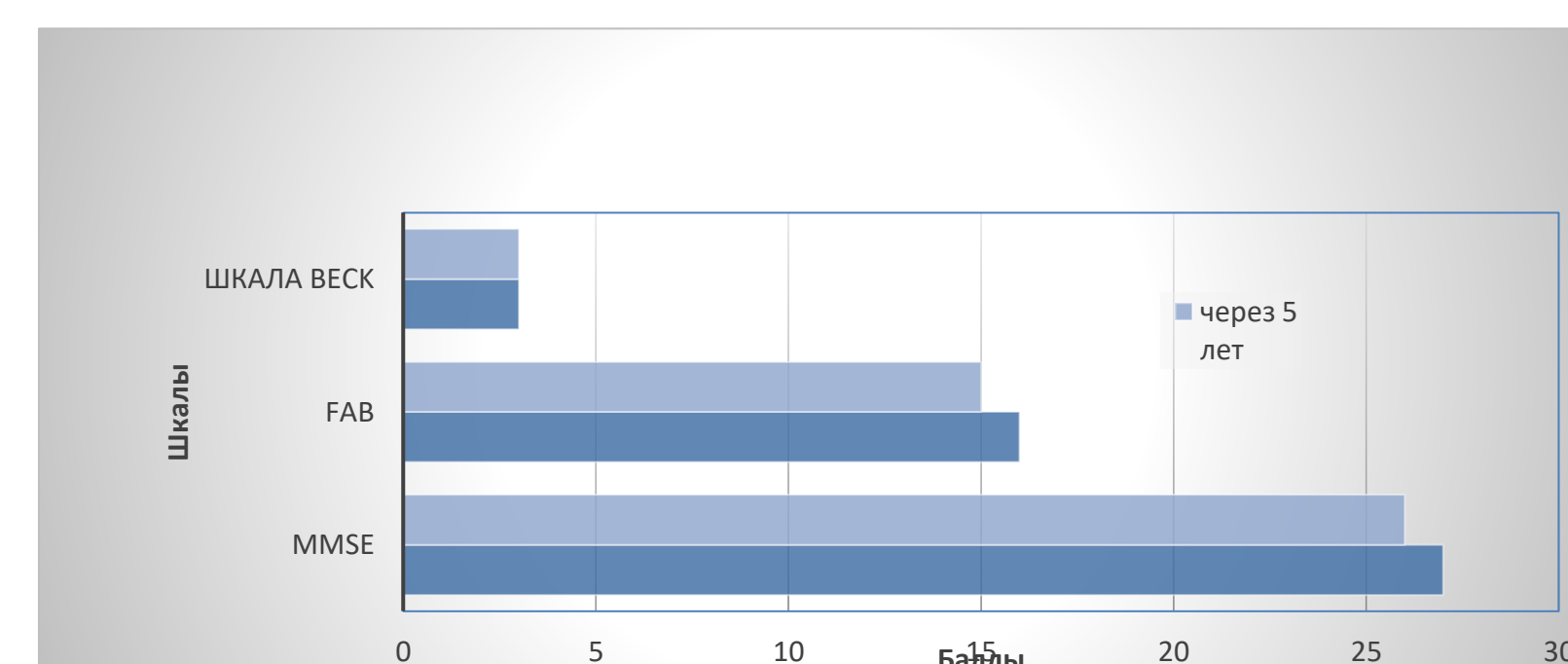


Figure 1. Neuropsychological testing

CONCLUSION

Mild cognitive impairment, asthenia syndrome, and vestibulopathy syndrome are very common among patients with ischemic heart disease. Signs of cerebral angiopathy (leukoaroyosis, cysts, width of ventricle III) indicate the vascular nature of neurological disorders.

FUTURE WORK / REFERENCES

- LONG-TERM NEUROPHYSIOLOGICAL OUTCOMES IN PATIENTS UNDERGOING CORONARY ARTERY BYPASS GRAFTING. Tarasova IV, Trubnikova OA, Syrova ID, Barbarash OL. *Brazilian Journal of Cardiovascular Surgery*. 2021;36(5):629-638. DOI:10.21470/1678-9741-2020-0390
- IMPACT OF PREOPERATIVE MILD COGNITIVE IMPAIRMENT ON CEREBROVASCULAR EVENTS AND COGNITIVE STATUS IN PATIENTS UNDERGOING CORONARY ARTERY BYPASS GRAFTING: DATA FROM 5-YEAR FOLLOW-UP. Syrova ID, Trubnikova OA, Tarasova IV, Maleva OV, Semenov SE, Lozhkin IS, Barbarash OL. *Russian Journal of Cardiology*. 2021;26(9):28-34. DOI: 10.15829/1560-4071-2021-4519