Research article

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ROLE OF MACROPHAGES AND LYMPHOCYTES IN MORPHOGENESIS OF FEATURES OF BLOOD VESSEL IN PATIENTS WITH METABOLIC SYNDROME COMPLICATED BY STROKE

The study was conducted as the part of research work The research was conducted as part of research work "Pathomorphology of cardiovascular system, placenta, adipose tissue, kidney, brain, regulatory systems (APUD, immune) in metabolic syndrome, acute myocardial ischemia, obliterating diseases of lower extremities, pulmonary disease, cancer processes and intrauterine infection in clinic and experiment" (state registration 0107U002769).

ABSTRACT. Background. The main morphological substrate of arterial disease in the metabolic syndrome is atherosclerosis, which morphogenesis is studied insufficiently. **Objective.** To estimate the role of macrophages and lymphocytes in the morphogenesis of changes of cerebral arteries in patients with metabolic syndrome complicated by ischemic and hemorrhagic stroke. **Methods.** We investigated brain vessels of 30 deaths from ischemic stroke, 30 - with hemorrhagic stroke on the background of metabolic syndrome and 20 died of causes unrelated to cerebrovascular disease (control group). Samples were investigated with histological and immunocytochemical methods; in particular the expression of CD4, CD8, CD20 and CD68 markers was examined. **Results.** The amount of CD68 positive cells in the area of formation of atherosclerosis lesions was 16,68±1,82 in group with ischemic stroke and 14,56±1,28 in group with hemorrhagic stroke. The number of T-helpers ($CD4^+$) in the area of formation of atherosclerosis lesions was 11,18±1,76 in group with ischemic stroke and 10,32±1,24 in group with hemorrhagic stroke. The number of T-suppressors ($CD8^+$) was 8,56±1,16 and 9,12±1,64, respectively. The amount of B-lymphocytes ($CD20^+$) was - 5,34±0,86 with ischemic stroke and 6,04±1,14 with hemorrhagic stroke. **Conclusion.** The presence of macrophages, helper and suppressor lymphocytes in vessel wall with atherosclerosis in patients with ischemic and hemorrhagic stroke as complication of metabolic syndrome confirm the role of these cells in morphogenesis of changes in brain arteries at metabolic syndrome.

Key words: macrophages, lymphocytes, atherosclerosis, metabolic syndrome.

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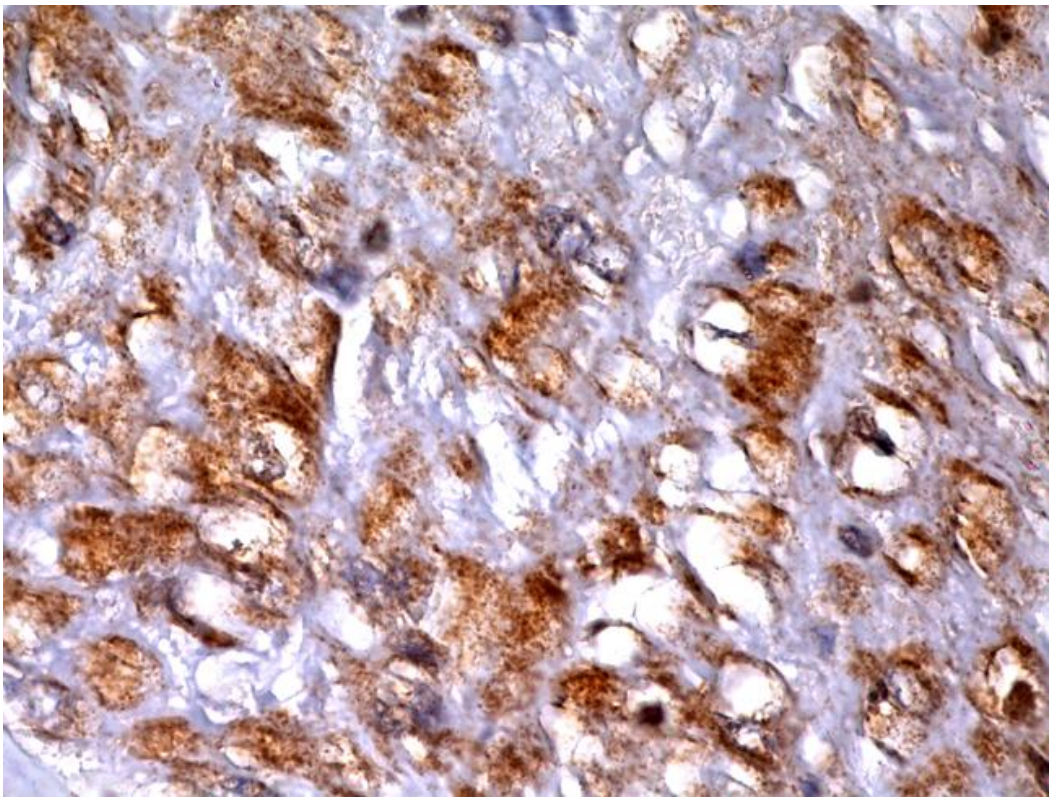

Fig. 1. CD68 marker expression in the arterial wall of the patient with ischemic stroke. ×400.

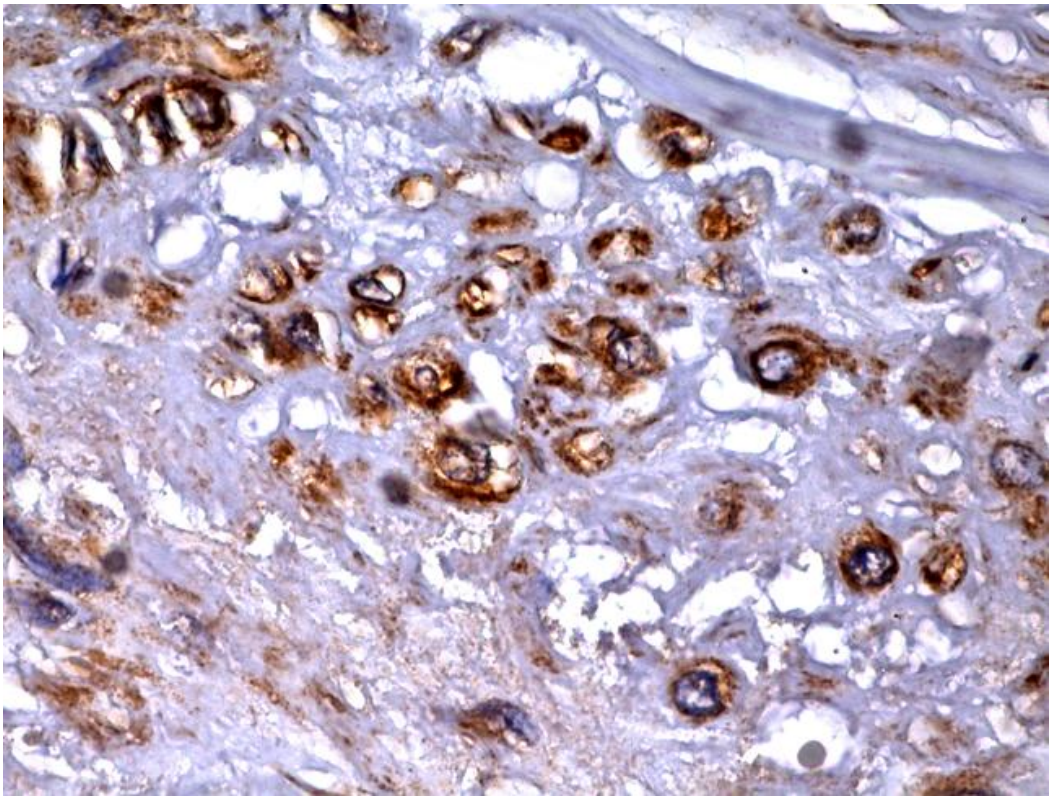

Fig. 2. CD4 marker expression in the arterial wall of the patient with ischemic stroke. ×400.

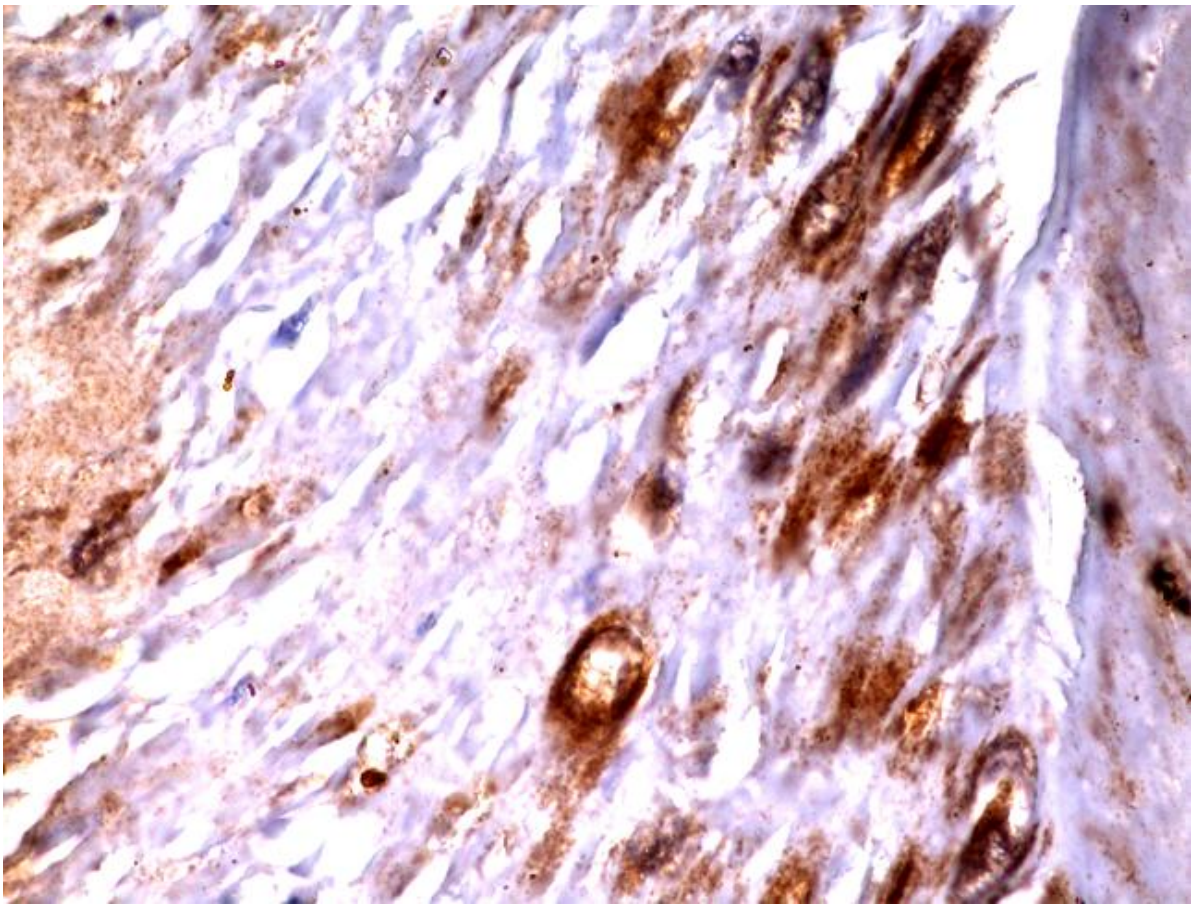

Fig. 3. CD20 marker expression in the arterial wall of the patient with hemorrhagic stroke. ×400.

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