Секция «Тезисы на английском языке»

NG-2 positive intimal cells are located in typical sites of atherosclerotic lesions development

Научный руководитель – !? !? !?

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It's well known that atherosclerosis usually develops in typical sites - curvatures and bifurcations of arteries [1]. However, atherogenic factors act systemically, so some mechanism of local atherogenesis induction should exist. Modern understanding assign a great role to shear stress which changes when laminar blood flow turns in turbulent in curvatures and bifurcations of vessels. However, in humans there are relatively straight portions where atherosclerosis occurs frequently.

We supposed that in typical sites of atherogenesis some cells influencing early stages of this process can be located. The most likely candidates for this role are pericytes - cells that form clusters under the endothelium, and have, in particular, the ability to accumulate lipids [2]. Unfortunately, the immunophenotype of perycytes located in walls of large vessels are not well studied, so it's difficult to identify them. Therefore the aim of our work was to identify markers of these cells and to study their distribution in the intima of large vessels.

Methods. C57BL/6 mice and transgenic mice carrying the GFP gene under the nestin promoter [3]. After euthanasia aortas were isolated from the heart to the renal arteries, and then were opened longitudinally for whole-mount immunohistochemical staining or were frozen for sectioning. For staining antibodies to the pericytic marker - NG2 proteoglycan and also to eGFP and to CD31 were used. Visualisation was performed using confocal microscope.

Results. We demonstrated that nestin-positive cells are localized in the adventitia of the aorta and its major branches, but they are absent in the subendothelial layer. After staining of sections with antibodies to NG2 we discovered that NG2-positive cells are located in bifurcations of the aorta its major branches. Also in whole-mount stained aortas we detected concentric arrangement of NG-2-positive cells around the orifices of small vessels and on the lesser curvature of the aortic arch.

Conclusions. In other tissues pericytes can be either nestin-positive or nestin-negative [4]. In the subendothelial layer of the aorta and large arteries there are nestin-negative, NG-2 positive cells located in typical areas of atherosclerosis.

Источники и литература

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