

The analysis of VEGF and CD45 expression in the lung and liver tissue during the LNA-MIR-204-inhibitor exposure in melanoma B16

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Introduction. MicroRNAs act as para- and autocrine regulators of tumor biological behavior [2] and influence the formation of "metastatic niches" [3], so their inhibition can be effective in the treatment of melanoma in the premetastatic phase of its development.

Aim. To estimate the expression level of VEGF and CD45 in the lung and liver tissue during the LNA-MIR-204-inhibitor (iLNA) exposure in the premetastatic phase of experimental melanoma B16.

Materials and methods. The study was conducted on 18 C57BL/6 mice, which were divided into 3 groups: PBS (N=4), NC (N=7), iLNA at a dose of 25 mg/kg. (N=7). Melanoma cell culture B16 was subcutaneously transplanted into mice of each group. The lung and liver tissue were studied by determining the level of VEGF and CD45 expression by counting VEGF+ stained vessels and CD45+ cells expression, and using immunohistochemistry (IHC). Statistical data analysis was performed, using Statistica 13.3, reliability evaluation was assessed by Mann-Whitney U-test, Kruskal-Wallis test, $p < 0.05$.

Results. According to the results of IHC analysis, when counting the amount of VEGF+ stained vessels, there were no statistically significant differences in the studied groups in lung tissue, but in liver tissue there was an increase in the level of VEGF expression, $p = 0.0067$. When calculating the number of CD45 + cells, a sharp increase in their number in the lung and liver tissues in the NC group was revealed, compared to the PBS and iLNA groups, $p = 0.0001$.

Conclusion. The increase in the number of CD45 + cells in lung and liver tissue corresponds to leukocyte infiltration of target organs. A statistically significant change of VEGF expression level in the iLNA25 group in liver tissue corresponds to the remodeling of the organ with the angiogenesis [1]. Based on received data, there is no correlation between VEGF and CD45, however, the role of miRNA-204 in tumorigenesis of melanoma, as antioncogenic factor, has been confirmed [4].

Источники и литература

- 1) 1. Франциянц Е.М., Комарова Е.Ф., Позднякова В.В. Система факторов неоангиогенеза и пролиферации в ткани меланомы кожи // Фундаментальные исследования. – 2013. – № 7 – С. 423-427.
- 2) 2. Acunzo M., Croce C. M. MicroRNA in cancer and cachexia — a mini-review. // J. Infect. Dis. 2015; 212 (Suppl. 1) : S74—S77.
- 3) 3. Ell B., Kang Y. MicroRNAs as regulators of tumor-associated stromal cells // Oncotarget. 2013 Dec; 4(12): 2166–2167.
- 4) 4. Luan W., Qian Y., Ni X., Bu X., Xia Y., Wang J., Ruan H., Ma S., Xu B. miR-204-5p acts as a tumor suppressor by targeting matrix metalloproteinases-9 and B-cell lymphoma-2 in malignant melanoma // Onco Targets Ther. 2017 Feb 27;10:1237-1246.