REVIEW ARTICLES

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Disturbance of bioelectric transmission in carcinogenesis

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Abstract

Background: Despite significant financial resources invested in the field of cancer research, there has been a steady increase in the registration of new cases of malignant neoplasms. Modern technical capabilities for analyzing the molecular substrate of tumor genesis have revealed a large number of such factors. The latest studies point out the paramount importance of the integral bioelectric field as contrasted with molecular mechanisms in oncopathology. Clear evidence has emerged that the "decision" of a certain part of the body to develop a tumor depends on the bioelectric state of remote regions. In the light of these findings, it becomes obvious that the difficulties in solving the cancer problem are associated with a simplified approach focused only on molecular components.

Conclusions: It can be assumed that the difficulties in solving the cancer problem are associated with a simplified approach, focused only on molecular components. It is difficult to identify clear differences between the blastomic and healthy cells, as they work according to the same biological principles, although differently expressed. Despite functioning with almost identical molecular components, tumor and healthy tissues differ significantly in the dynamics of growth and pattern formation. The above data indicates that the "decision" of a certain part of the body to develop a tumor depends on the bioelectric state of remote regions. In this context, the prognosis and treatment of malignant neoplasms can most likely be achieved not by local, gene-targeting technology, but by methods for the detection of tumor signatures in the morphogenetic field of the organism.

Key words: carcinogenesis, bioelectric patterns, non-coding RNAs.