

Etiology of cancer: increased formation of blood vessels among cells

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Goal of the study: To find etiology of cancer.

Introduction: During malignant transformation, dysregulation of angiogenesis leads to the formation of a vascular network of tumor-associated capillaries promoting survival and proliferation of the tumor cells. Starting with the hypothesis formulated by Judah Folkman [1] that tumor growth is angiogenesis-dependent, this area of research has a solid scientific foundation and inhibition of angiogenesis is a major area of therapeutic development for the treatment of cancer.

Material and methods: There were analyzed articles from Google scholar database, from the last 5 years 2020-2025, mentioned such words as “vascularization of tumor cells”.

Results: Tumors rely on blood vessels to grow and metastasize. The tumor microenvironment is rich in pro-angiogenic factors [2]. Pro-angiogenic conditions in the tumor microenvironment, such as hypoxia, are double-edged swords, promoting both the repair of normal tissues and the development of an abnormal blood vessel network. Vascular normalization entails modifying the tumor vascular system to improve tumor oxygenation and substance transport, thereby contributing to improving the efficacy of radiotherapy, chemotherapy, and immunotherapy.

Conclusion: Over this period numerous authors published data of vascularization of tumors, which attributed the cause of neo-vascularization to various factors including inflammation, release of angiogenic cytokines, vasodilatation, the role of the endothelial system [3-12] and increased tumor metabolism. According to legend, Paul of Aegina reported in the 7th century AD that cancer was so called because this disease “*has the veins stretched on all sides as the animal the crab has its feet, whence it derives its name*”. However, the first historical description of blood vessels related to cancer is commonly accredited to Galen of Pergamon (AD 129-c. 200/c. 216).

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