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The key to the riddle of the mechanism of most CVD and cancer is in arteriovenous anastomoses

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Problem: The lack of a systematic approach in modern medicine led her to stagnation. The problem of the mechanism of CVD and cancer is not solved. All this, apparently, was due to the division of medicine into separate directions. Each direction operates according to its own rules, there is no system.

Goal: The purpose of this work is to find and substantiate the true mechanism of many diseases from the point of view of the system.

Methods: Participation in scientific conferences, discussions with leading Russian cardiologists, retrieval of information search in the literature.

Results: It was shown [1] that large changes in human health occur due to the suboptimal work of large arteriovenous anastomoses (AVA). AVA may exist between the mesenteric artery and portal vein [2]. The very existence of AVA is necessary to reduce blood pressure (BP). When opening AVA there is a sharp decrease in BP, when closing - increase [3]. Physical activity is the key to the correct operation of the AVA. But under stress, hypodynamia, with excessive nutrition, there are violations of the mechanism of opening\closing the AVA. Hollow veins overflow, the venous bed expands its volume, damaged valves, the pressure difference between the arterioles and veins becomes insufficient to supply cells with food and oxygen. Fluctuations in venous blood lead to mechano-induced arrhythmias [1]. Oxidative stress occurs in the tissues. Through the walls of blood vessels there is a leakage of blood, so increases the tissue pressure and volume. Begin swelling, stagnation, obesity, varicose veins, thrombosis, primarily in the lower half of the body, then in the entire volume. Individual cells, deprived of oxygen supply, are modified, subject to necrosis, mutate, turn into cancerous [4, 5]. There are many CVD, including heart failure (HF) [6]. Edema is known to be associated with HF. According to the data of real measurements [7] in people with HF the perivascular zone is the widest (about 150 microns), and in healthy people it is much narrower (90 microns). Result: increased body size and weight. And no matter the quality of food. The volume of food and liquids absorbed is important. It is natural to assume that there is, as a rule, a bouquet of diseases - this is the work of open AVA.

Conclusions: The New theory of the CVD and cancer finds more and more positive arguments and facts. It is necessary to confirm the universality of the New theory in special experiments.

Recent Publications:

1. Evgeny A Shirshin, et al. (2018) In vivo optical imaging of the viable epidermis around the nailfold capillaries for the assessment of heart failure severity in humans. *Journal of Biophotonics* 29.
2. Ermoshkin V (2017) The cause of some cancers because of the open arteriovenous anastomoses. *J Gastrointest. Cancer Stromal Tumor* 2:111.
3. Ermoshkin V I (2016) New theory of arrhythmia. Conceptual substantiation of arrhythmia mechanisms. *Cardiometry* 8:6-17.
4. Ermoshkin V (2016) Pathological role of the "invisible" anastomoses. *J Bioengineer & Biomedical Sci* 6:209.

Biography

Vladimir Ivanovich Ermoshkin completed his Graduation in Physics department at Moscow State University in 1978. He has worked at Russian New University (RosNOU) as Physicist. He took part in 5 International Conferences on Cardiology. He has published about 20 articles on Cardiology in Prominent magazines.

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