Cancer Medicine Journal

Short Communication | Vol 2 Issue 1

New Data on the Relationship of the Mechanisms of Cardiovascular Diseases and Cancer

Ermoshkin Vladimir Ivanovich*

Russian New University (Rosnou), Moscow, Russia

***Corresponding author:** Vladimir Ermoshkin, Russian New University (Rosnou), Moscow, street Radio, 22, Russia, Tel: +79645069550; E-mail: evlad48@list.ru

Received Date: January 11, 2019; **Accepted Date:** February 02, 2019; **Published Date:** February 09, 2019

Introduction

Earlier in 2012-2017 our research team proposed and analytically substantiated the mechanism for the occurrence of many cardiovascular diseases and certain types of cancer. Data about the possible mechanism has been published in several articles and has been discussed at several conferences. But it was necessary to confirm this mechanism in practice, on statistical material. We were looking for this mechanism confirmation, and finally we found it.

Method

The study of numerous sources of information about the causes of CVD and cancers are available on the Internet. Discussion of proposed ideas at medical conferences is important.

Result

The mechanism of the development of cardiovascular diseases and certain types of cancer proposed by our group was as follows. Ideally, a "physically completely healthy organism" is an organism in which every cell, without long pauses, is provided with continuous nutrition and oxygen. But the real life of a modern man is such that, due to heavy physical exertion, due to cold or heat, due to unfavorable working and rest conditions, due to psychological stresses, due to injuries and illnesses, due to violations of a healthy lifestyle the normal blood circulation in the organs is disturbed. To respond to changing conditions, the central nervous system must increase or decrease systemic arterial blood pressure (ABP).

Sometimes arterial pressure rises due to the limit values, for example, with a sharp transition from rest to some kind of work, with sudden fright or delight. Therefore, there are extreme loads on the cardiovascular system. The nature has provided protection against sharp increases in arterial pressure which can lead to possible strokes and infarctions: the presence of small and large arteriovenous anastomoses (AVA) or shunts in the vascular system. At the moments of critical increase in arterial pressure, usually constantly closed AVA suddenly open and arterial blood flows into the veins [1, 2]. Systemic ABP in such moments falls, the cardiovascular system not being damaged. After a few seconds, the AVA closes again. Gradually, ABP restores its normal performance. Now we can say that the full list of AVA functions is yet to be studied.

Citation: Ermoshkin Vladimir Ivanovich, New Data on the Relationship of the Mechanisms of Cardiovascular Diseases and Cancer. Cancer Med J 2019: 2(1) 1-5.

But when a man is physically passive preferring a sedentary lifestyle, the work of AVA is disturbed. In such persons, after the discharge of excess arterial blood into veins, the AVA is closed with large delays, or they are not completely closed. Therefore, the volume of venous blood in a sitting or standing position is constantly increasing. This disrupts the optimal ratio of arterial and venous blood in the body. Under the influence of gravity, the blood excess in a sitting or standing position accumulates in the pelvic organs or limbs, in the so-called "gravitational traps". At the beginning, the venous valves counteract the flow of blood downward but they become damaged with time. Already in middle age, a man may notice expansion of the superficial veins in the legs, and then varicose veins and thrombosis occur in organs, primarily located in the lower half of the body.

We can say that, due to open AVA in some organs, there is an increase in venous pressure in the small veins and venules to values of first 30, then 40, and even up to 50 mm Hg, although the optimum value for the organs' cells feeding is from 12 to 18 mm. Let's recall that in arterioles the average pressure is about 50 mm Hg and it is continuously maintained by the working heart and aorta. For normal blood circulation, the pressure drops (gradient) between arterioles and venules should be about 35 mm.

If the AVA is open, additional blood flows through the shunts into the veins and in some venules the pressure rises, for example, to 30 mm. As a result, the drop is reduced to 20 mm (50 mm minus 30 mm). This is not enough for normal blood circulation, and in this situation the blood in the capillaries begins to move more slowly than usual. As a result, ischemia occurs in some areas of the body. With a further decrease in the pressure gradient, blood can move in the capillaries like a pendulum: in the systole - forward, in the diastole - back. With a difference of about 0 mm, the blood stops in some capillaries and the cells remain without food and oxygen. But at the same time in the neighboring capillaries where, for example, the pressure difference is more than 10-20 mm, the blood moves although slowly. Note that at the same time in other groups of cells and organs, the blood circulation may not be disturbed, since the pressure drop there may be sufficient and equal to about 35 mm Hg.

The main thing is that if the pressure gradient is insufficient, the blood slows down or stops simultaneously in the small veins and small arteries. Why at the same time? This follows from the continuity of flows and micro flows. Unfortunately, it is under these conditions that micro thrombus begin to form in the veins and arteries. We can say that cells (or groups of cells) with impaired blood circulation and nutrition are scattered with different density among healthy cells through different organs throughout the body. Let me remind you that the human body consists of more than 36 billion cells! It is impossible to imagine that with an increase in systemic ABP, the nutrition for all cells remains normal and equal. After all, the lengths, widths and numbers of bends of vessels on the way to each cell are always different. It turns out that during the transfusion of venous blood through the AVA, the organs as a whole continue to perform their functions, but pathology in some parts of the body is already beginning. Affected cells or groups of cells undergo apoptosis and necrosis. There are mutations and micro tumors. Due to delays in blood circulation and to the lack of oxygen, the acidity of the tissue increases and the temperature decreases in these micro areas.

Over time, some cells can be reborn into cancer. In parallel, "systemic inflammation" can be formed. The need to introduce this term was justified in 1992 [3], but the mechanism has not yet been fully studied. It was emphasized that with systemic inflammation the immune system works with overloads and does not cope with the tasks of destroying foreign tumor cells.
So where do the problems begin?

Of course, it is not because of optimally functioning anastomoses of AVA with increases in ABP. Hence, prevention of cardiovascular diseases (CVD) and cancer must begin with the observation of the AVA functioning and their possible "treatment". Prolonged open AVA leads to overflow of the venous pool, to stretching of the veins walls. For example, in an anastomosis between the superior mesenteric artery and the portal vein [4] the liver suffers first. This is because there are no obstacles (except for the gravity of the Earth for vertical spine) downstream, along the portal and inferior vena cava. The blood pressure in the inferior vena cava up to the right atrium becomes elevated. At the same time, pressure in the hepatic vein becomes elevated as well. The liver is partially blocked; all the veins located below it are filled with venous blood and begin to work poorly. Under some conditions, the liver begins to pulsate. The pulsations to the liver transmit mechanical impulses (heart pulses) running through the arteries. In turn, these mechanical impulses are transmitted to the vena cava and further along the vena cava to the heart. The impulses lead myocardium to mechanically induced arrhythmias, to atrial or ventricular extra systoles, to paroxysmal tachycardia. Excitation of the heart occurs because cardiomyocytes respond equally well to bioelectric and mechanical impulses. More on this can be found in my earlier articles [5-15]. Of course, in some percentage of cases there are other mechanisms of arrhythmia.

During a night's sleep in a horizontal position, the gradient of venous pressure for the whole human body is close to zero and the body restores venous blood circulation disturbed during the day time. The imbalance of arterial and venous blood is eliminated. That is why sleeping is so important to human health!

So, usually diseases of the cardiovascular system for a particular patient are formed one after another, over several years: first, hypertension (accelerated by osteochondrosis), then arrhythmia, heart failure, edema, atherosclerosis, plaques, varicose veins, thrombosis, diseases of the pelvic organs.

And the ends of all troubles are strokes, infarctions and oncology.

This sequence of events has been justified by the New Theory of CVD and Cancer: most of the listed diseases have the same mechanism!

However, official medicine has not yet recognized this mechanism.

Finally on 10/14/2018, a confirmation of the New Theory of CVD and cancer unexpectedly arrived! The American Society for Hematology has published data on the significant correlation between CVD and cancer in the medical journal Blood [17].

It turned out that among the 748,662 patients aged 67 years and older who were treated with Medicare program, the risk of developing arterial thromboembolism was increased by 69% in one year or less before date of cancer diagnosis. In addition, the increased risk of developing arterial thromboembolic complications began 5 months before cancer was officially diagnosed. This is what is reported in the journal Blood [16].

Validated diagnosis codes were used to identify arterial thromboembolic events, defined as a composite of myocardial infarction or ischemic stroke. The Mantel-Haenszel estimator was used to compare risks of arterial thromboembolic events between cancer and non-cancer groups during 30-day periods in the 360 days before date of cancer diagnosis. From 360 to 151 days before cancer diagnosis, the 30-day interval risks of arterial thromboembolic events were similar between cancer patients and matched controls. From 150 to 1 day before cancer diagnosis, the interval 30-day risks of arterial thromboembolic events

were higher in cancer patients versus matched controls, progressively increasing as the cancer diagnosis date approached, and peaking during the 30-days immediately before cancer diagnosis, when 2,313 (0.62%) cancer patients were diagnosed with an arterial thromboembolic event versus 413 (0.11%) controls (odds ratio, 5.63; 95% confidence interval, 5.07-6.25). In conclusion, the risk of arterial thromboembolic events begins to increase 150 days before the date of cancer diagnosis in older persons and peaks in the 30 days before.

The study is the largest and most systematic evaluation of these events leading up to a cancer diagnosis, according to researchers at Weill Cornell Medicine, New York-Presbyterian, and Memorial Sloan Kettering Cancer Center in New York City.

Thus, cancer is the last link in the development of a number of dangerous heart diseases in humans. It is shown those 5 months before date of cancer diagnosis in patients over 67 years old, 69% more often have strokes, heart attacks and other thromboembolic events in comparison with the same group of healthy people. It can be assumed that statistics close to these figures will also be for people of younger age, for example, for 55-65 year old patients. But the gap between CVD and cancer will be larger in time: not 5 months, but 12 months or more. This means that older people with significant venous plethora first have diseases of the cardiovascular system, and then, sooner or later, they will suffer from the most common cancers.

Conclusion

The New Theory of CVD and Cancer are quite plausible. In fact, it is confirmed by the American Society for Hematology. The New Theory of CVD and Cancer have proven its worth for more than 7 years. It is necessary to direct the maximum efforts of researchers for the approval and dissemination of the proposed theory. Knowledge of the mechanisms described in the New Theory of CVD will lead to new methods of treating the most dangerous human diseases. But there is still a lot to do.

References

1. Lukyanchenko VA (2016) Cardiometric signs of performance of arteriovenous anastomosis in human cardiovascular system. Cardiometry 8: 22-25.
2. Ermoshkin V (2016) New theory of arrhythmia. Conceptual substantiation of arrhythmia mechanisms. Cardiometry 8: 6-17.
3. http://odlarmed.com/?p=3144
4. http://valsalva.ru/viewtopic.php?t=1101&sid=137874936ec435e6be6626bf749f6a0f
5. Ermoshkin V (2017) The new theory of cancer complements ancient Chinese Qigong therapy. Therapy 5: 8.
6. Ermoshkin V (2017) The cause of some cancers because of the open arteriovenous anastomoses. Journal of Gastrointestinal Cancer and Stromal Tumors 2(1): 111-112.
7. http://esa-conference.ru/wp-content/uploads/2018/03/esa-february-2018-part2.pdf
8. Ermoshkin V (2018) Multiple sclerosis. Why did the progressive theory of Paulo Zamboni not find support? But then a new one was born. International Journal of Case Studies in Clinical Research 2(1): 04-06.
9. Ermoshkin V (2016) Arteriovenous anastomoses and cardiovascular diseases. EC Cardiology 2: 190-195.
10. Ermoshkin V (2016) A new theory of certain cardiovascular diseases. EC Cardiology 2(5): 223-225.
11. http://heartdiseases.conferenceseries.com/abstract/2017/problems-heart-failure-unexpected-outcome
12. Ermoshkin V (2016) Heart transplantation mysteriously eliminates arrhythmia. Cardiometry 8: 18-21.
13. Ermoshkin V (2016) Venous congestion due to large arteriovenous anastomoses. Hypertension Current Concepts and

Therapeutics 1(1): 1-4.

14. Ermoshkin V (2018) The cause of cancer from the point of view of the new theory of CVD. Chronicle of Medicine and Surgery 2(1): 88-93.
15. Ermoshkin V (2018) The cause of the morning headache is a violation of the venous outflow from the head due to the oncoming fow. Journal of Biomedical and Pharmaceutical Sciences 1: 113.
16. Navi BB, Reiner AS, Kamel H, et al. (2018) Arterial thromboembolic events preceding the diagnosis of cancer in older persons. Blood 860-874.