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INFLUENCE OF ECOPATHOGENS ON BLOOD VESSELS

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Abstract

This article examines the negative consequences of exposure to ecopathogens and microorganisms circulating in the environment. The synergistic effect of ecopathogens is assessed by the immune system of a living organism. Environmental pathogens can affect the functional state of organs, tissues, and blood vessels, blocking natural immunity. Young organisms are extremely sensitive to the complex effects of environmental factors. In this case, organs and tissues are unable to defend themselves. Exposure to environmental pathogens can lead to the development of various vascular diseases.

The functional state of living organisms' natural defenses is also assessed by the state of a healthy environment. Creating a healthy environment in developing cities requires improving environmental quality. This requires the widespread implementation of ecotechnologies.

Keywords

Atmosphere, ecofactors, ecopathogen, environment, muscles, hearts, blood vessels, arteries, collagen, elastic, oxygen, cell, patient, microcirculation, ecotechnology.

ВЛИЯНИЕ ЭКОПАТОГЕНОВ НА КРОВЕНОСНЫЕ СОСУДЫ

Аннотация

В статье рассматриваются негативные последствия воздействия экопатогенов и микроорганизмов, циркулирующих в окружающей среде. Синергетический эффект экопатогенов оценивается иммунной системой живого организма. Экопатогены могут влиять на функциональное состояние органов, тканей и кровеносных сосудов, блокируя естественный иммунитет. Молодой организм чрезвычайно чувствителен к комплексному воздействию экофакторов. В этом случае органы и ткани не могут самостоятельно себя защитить. В результате воздействия экопатогенов на живой организм развиваются различные заболевания кровеносных сосудов.

Функциональное состояние естественной защитной системы живых организмов также оценивается по состоянию здоровой среды. Для создания здоровой среды в развивающихся городах необходимо повышение качества экологии. Для этого необходимо широко внедрять экотехнологии.

Ключевые слова

Атмосфера, экофакторы, экопатоген, окружающая среда, мышцы, сердца, кровеносный сосуд, артерия, коллаген, эластик, кислород, клетка, пациент, микроциркуляция, экотехника.

Introduction

Protecting the human body from the negative impact of harmful environmental factors is currently considered a pressing issue.

Gastrointestinal pathogens, which cause various diseases, also contribute to cardiovascular disease. However, the mechanisms by which individual environmental factors and microorganisms influence blood vessels remain poorly understood.

To protect humanity from ecopathogens, it is necessary to improve the environmental quality of developing cities. This requires the use of various ecotechnologies. Ecotechnologies are measures aimed at preserving the environment, protecting, restoring, and improving its quality. However, due to the daily increase in the number of new buildings, structures, industrial waste, and other environmental factors, the effectiveness of ecotechnologies is low. This creates conditions for the development of ecopathogens.

Ecopathogens are microorganisms that are environmental factors that cause immune system disorders. Pathogenic microorganisms cause various vascular diseases in living organisms. In particular, their effects on blood vessels are contributing to the increasing incidence of cardiovascular disease. Changes in air temperature, water pollution, abiotic factors, microorganisms, construction materials, noise, electromagnetic waves, ecopathogens, and other factors affect the free flow of blood through the vessels. As a result, organ tissues are deprived of nutrients and oxygen. This leads to changes in the number of white and red blood cells, a decrease in the number of lymphocytes, and impaired red blood cell function.

Heavy metals in building materials, specialty insecticides, contaminated beverages, chemicals, airborne food poisoning, and toxic substances in water contribute to the development of cardiovascular diseases.

As a result of the impact of ecopathogens on the microcirculation of blood in the vessels, the connection between the arteries and veins is disrupted; arterioles, capillaries, venules and arteriovenous anastomoses are affected; the diameter, composition and functional state of the vessels are changed; the walls of the arteries are damaged by muscle fibers, collagen and elastic fibers; the function of the vessels, which should narrow or expand depending on the blood volume, is impaired; the blood flowing through the vessels is not saturated with oxygen and nutrients; the walls of the vessels and smooth muscle fibers weaken; smooth muscles cannot protect the cells; venules do not provide systemic circulation; they impede blood flow to the heart; arterioles-venules cannot directly control blood flow; the function of smooth muscle cells that regulate blood flow is impaired, etc.

The cardiovascular system's response to environmental factors is assessed by the immune system. The immune system of a living organism adapts organs and tissues to the external environment and protects them from environmental pathogens.

The synergistic effect of certain substances on the immune system increases platelet activity, which accelerates blood clotting and contributes to the development of cardiovascular diseases.

Excessive concentrations of certain pollutants and environmental pathogens in the atmosphere can worsen cardiovascular diseases and even lead to death. As a result, changes in ambient temperatures lead to an increase in emergency room visits. Almost all of these patients complain of high blood pressure and shortness of breath.

A literature review shows that exposure to various pathogens associated with environmental changes leads to an increase in the number of people suffering from cardiovascular diseases, influenza epidemics, viral infections, and other illnesses. The emergence of some diseases is attributed to complications arising in the cardiovascular system.

Changes in ambient temperature promote the development of pathogens that cause cardiovascular diseases. Therefore, cardiovascular diseases can be considered seasonal, environmentally related diseases.

As a result of global environmental changes, pathomechanisms arise in organs and tissues that manifest as a sequence of several interconnected cascades.

Online sources provide information on the use of the autoregressive integral method to study the blood composition of patients with cardiovascular diseases. Mathematical models were used for this purpose. This model can be used to obtain information on average daily air temperature, wind speed, relative humidity, abiotic factors, and other factors. The analysis results serve as the basis for disease prognosis.

Thus, changes in the ecosystem create unfavorable conditions for a healthy body. This leads to a decrease in lymphocytes, an increase in myelocytes, and disruption of systemic microcirculation and vascular function. This can also damage blood cells and lead to the development of various vascular diseases.

To maintain a healthy lifestyle and protect ecosystems from ecopathogens, the following is necessary: meeting environmental needs; developing environmental safety programs; monitoring the targeted use of resources; developing environmental technologies that reduce harmful emissions; introducing environmental education in kindergartens and schools; conducting public awareness campaigns, etc.

To ensure people live in a healthy environment, it's essential to address environmental safety issues. Exposure to atmospheric pollutants leads to environmental epidemics. A weakened immune system leads to a number of cardiovascular diseases. This leads to increased incidence of blood pressure disorders, cardiovascular disease, respiratory failure, endocrine system changes, and disability. Therefore, it is important to study the influence of pathogens and anthropogenic factors that cause the development of cardiovascular diseases in people living in ecologically unfavorable regions. The anthropogenic factor is characterized by significant changes in climate, the level of human development, and its impact on the environment.

To protect living organisms from environmental irritants, it is necessary to study the causes of cardiovascular diseases in adults and children living in polluted environments, as well as in workers. Regular sanitary and hygienic examinations are necessary to assess the impact of environmental factors on the body. Recommendations should be developed based on these examination results. Based on the developed programs, it is necessary to systematically implement measures for environmental protection, health promotion, disease prevention, and other activities. This will create protective measures against the negative impact of environmental factors and ecopathogens. This will improve the quality of diagnosis, prevention, and treatment of various cardiovascular diseases.

The literature contains information on the development of cardiomyopathy in schoolchildren caused by various pathogens, which, in turn, is explained by respiratory problems.

Public health is closely linked to the environmental situation. As a result of the development of modern technology, the incidence of respiratory diseases is increasing in people constantly exposed to man-made factors. This is the basis for the development of various vascular diseases.

Conclusion: To address the aforementioned problematic situations, it is necessary to find ways to utilize them effectively. This requires developing programs for the effective use of man-made and environmental factors, as well as reducing the concentration of environmental factors.

To address the problems discussed above, it is necessary to develop measures to preserve the natural defense mechanisms of the environment. Energy and water must be conserved. The use of environmentally friendly materials must be promoted. It is necessary to shape people's attitudes toward the environment and regulate the use of abiotic factors and technologies. In unfavorable living conditions, increased attention must be paid to ecopathogens.

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