переконливим доказом участі мікроорганізмів у виникненні карієсу зубів. В даний час загальноприйнято, що карієс є кислотної демінералізацією твердих тканин зуба, яка виникає в результаті зброджування легкозасвоюваних вуглеводів мікрофлорою Назубних нальоту при низькій резистентності емалі. Не всі дослідники згодні з цим. Є інші думки. Також не всі згодні з тезою про те, що демінералізація виникає внаслідок зниження pH. За сучасними уявленнями постійна мікробіота Назубних нальоту є також причиною виникнення запальних захворювань пародонту.

У XIX столітті антрополог Дюбуа на підставі вивчення великої кількості людських останків різних епох визначив, що представники людства, схильні до захворювання на пародонтит, стійкі до карієсу. І навпаки - схильні до карієсу є стійкими до захворювання на генералізований пародонтит. З середини XX-го століття у людей він перестав дотримуватися. Зараз у людини можна виявити дві ці патології спільно. Дослідження останнього часу встановили, що природою в нормі передбачені симбіотичні взаємини між організмом-господарем і мікробіотою. Причому мікробіота інтегрується в гомеостаз, фізіологію, метаболізм і імунну відповідь організму-господаря. Також вважають, що захворювання з його характерними клінічними проявами не є необхідною ланкою в біологічному циклі популяції патогенних бактерій. Є думки, що ініціює взаємодію з мікробами сам макроорганізм.

Робиться висновок, що питання про роль мікроорганізмів в етіології і патогенезі стоматологічних захворювань залишається відкритим. Знаходженню відповіді допоможе розгляд функціональних аспектів, що виникають між мікробіотою організму господаря і самим організмом. Для цієї мети природно використовувати методи дослідження функцій, а також біологічні методи аналізу симбіотичних спільнот.

Ключові слова: мікроорганізми, карієс, пародонтит.

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participation of microorganisms in the origin of dental caries. Presently generally accepted, that caries is the acid demineralization of hard tissues of tooth, that arises up as a result of the fermentation of easy digested carbohydrates by the microflora of dental plague at subzero resistance of the enamel. Not all researchers agree with it. There are other opinions. Also not everyone agrees with the thesis that the demineralization arises up because of lowering of pH. According to modern presentations a permanent microbiota of the dental plague is also the reason of origin of inflammatory diseases of paradontium.

In the nineteenth century an anthropologist Dubois on the basis of study of plenty of human remains of different epochs defined that the representatives of humanity prone to the disease a periodontitis are steady to the caries. And vice versa - prone to the caries humans are steady to the disease a generalized periodontitis. Since the middle of the twentieth century it has stopped to be observed among people. Now it is possible to find out in a man two these pathologies together. Researches of the last time set that symbiotic mutual relations between a host and microbiota are envisaged by nature in the normal condition. Thus a microbiota is integrated in homoeostasis, physiology, metabolism and immune answer of the host. It is also supposed, that a disease with its characteristic clinical displays is not a necessary link in the biological cycle of the population of pathogenic bacteria. There are opinions that the macroorganism itself initiates co-operating with microbes.

It is concluded that the issue of the role of microorganisms in etiology and pathogenesis of dental diseases remains open. The consideration of functional aspects arising up between the microbiota of the host and the organism itself will help to find the answer. For this aim it is natural to use the methods of research of functions and also biological methods of analysis of symbiotic associations.

Key words: microorganisms, caries, periodontitis.

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MEDICAL AND SOCIAL PROBLEM OF HEMATOLOGIC DISEASES OF UKRAINIAN POPULATION

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The central organ of hemopoiesis and immune protection is a red bone marrow that contains not only hemopoietic stem cells, but also it forms a unique microenvironment for their proliferation and differentiation. It is a red bone marrow that regulates access to peripheral blood of mature blood corpuscle. Pathological deviations in the blood system are considered to be an increase or decrease in the quantitative composition of individual cells, as well as changes in their ratios relative to each other, or changes in their form.

Key words: red bone marrow, diseases of the blood system, stem cells.

Hematologic diseases occupy one of the leading places in the structure of morbidity of the Ukraine's population. There is no doubt that among the main factors of the origin of the pathology of the blood system, a significant role belongs to the negative impact of environmental factors, the use of food additives, emulsifiers, stabilizers and other chemicals.

The appropriate state of things is conditioned by a number of reasons: • First, the diseases of the blood system are pathology, which traditionally has a significant spread in the human population and tends to increase the incidence; • Secondly, the high level of complications of this pathology is a concern; • Thirdly, it should be taken into consideration that in addition to its own clinical, there is also a

socioeconomic component related to the need for huge state budget expenditures for the treatment and monitoring of patients with hematological disorders [1, 30].

All bone marrow diseases are severe because they are serious threat to life. Diseases of the organs of hemopoiesis are topical medical and social problem. Disturbances in the blood composition reduce the ability of the body to respond adequately to the threats coming from outside; the maintenance of an internal stability of an organism becomes more complex; the productivity of ongoing processes is disrupted; there is a shortage or excessive accumulation of certain substances in organs and tissues; immune and neuropsychic reactions are suppressed [30, 36].

Hematologic diseases include indicators that characterize the level of various diseases and their structure among the general population or its separate groups in the area. In the complex of medical indicators of health, hematological diseases occupy a particular place, their medical and social significance is determined by the fact that these diseases are the main cause of death, temporary and permanent loss of ability to work, which in turn leads to large economic losses of society, negative influence on the health of future generations and a decrease in the population.

Materials about the level and structure of morbidity in different regions, as well as in certain sex-age groups, especially in the dynamics of several years, are necessary for the purposeful development of programs for the health promotion of the population, in particular, when planning the development of a network of medical and preventive institutions and training of medical personnel.

It is also important that indicators of hematological morbidity are one of the most informative criteria for the activities of health authorities and institutions and the effectiveness of medical and prophylactic measures.

The study of a red bone marrow pathology is an important medical and social problem, all diseases of the red bone marrow are severe because they are a serious threat to life, and when using placenta tissue, there is the stimulation of the work of the endocrine organs, the liver, the trophism of the cardiovascular system improves, the reparative ability of the tissues increases [36, 42].

Therefore, the study of the reaction of structural elements of the red bone marrow to the inflammatory process is a promising direction in the modern morphology, and the search for new methods in the complex therapy of the inflammatory process – in the modern hematology and experimental medicine.

The central organ of hemopoiesis and immune protection is a red bone marrow that contains hemopoietic stem cells and where the reproduction and the differentiation of the cells of the myeloid and lymphoid series occurs: erythrocytes, platelets, granulocytes, monocytes, B-lymphocytes and precursors of T-lymphocytes are formed [2, 29].

The works of local and foreign scientists who study bone marrow stem cells testify to their successful application in the treatment of many oncohematological diseases, including leukemia, lymphoma, pathology of plasma blood cells, as well as hereditary and acquired bone marrow diseases and autoimmune diseases. Active work is under way on the wide introduction into the clinical practice of approaches based on the use of stem cells in the treatment of cardiovascular, neurodegenerative and other diseases, injuries, burns [17-28].

The conventional method of treating of many hematologic and non-hematological diseases for the last decades has been bone marrow transplantation. The Worldwide Network for Blood and Marrow Transplantation (WBMT) announced in January 2013 about reaching 1 million registered transplantions of hemopoietic stem cells [29-34].

Today, in the world, transplants of hemopoietic stem cells are performed annually in more than 50,000 patients [35-38], with more than 70 diseases [39-42].

In the process of developing blood cells, scientists conditionally distinguish the following cell classes: - I class of pluripotential precursor cells, it includes hemopoietic stem cells; - II - class of partially determined pluripotential precursor cells. For example, during the postradiation period the recovery of blood at irradiation within 500-600 rad a temporary increase in the number of erythrocyte and granulocytes (but not lymphocytes) is observed. The bulk of cells is in the bone marrow, but it is not excluded that they can be moved from one part of the hemopoietic system to another; - III - class of unipotent precursor cells, capable of limited self-support (can exist for 10-15 mitoses, then they die).

The class is formed with the precursor cells of the parent cells of the separate hemopoietic series: a) erythropoietin-sensitive cell; b) colony-forming cells in cell culture (cells give rise to granulocytes and macrophages); c) thrombocytopoietin-sensitive cell; d) precursor cells of T- and B-lymphocytes.

The precursor cells of all levels are morphologically identified, their characteristic feature is the ability to be found in two morphologically different forms - blast and lymphocyte-shaped; - IV - class of

morphologically proliferating cells that are morphologically different from the previous class, it is represented with blast forms that give rise to separate hematopoiesis series - granulocytes, erythrocytes, monocytes, megakaryocytes and lymphocytes. The nucleus form of the blast cells is usually round, more rare it is oval or oval-stretched. The nucleus is located in the center of the cell or displaced to one of the poles. A characteristic feature of the cells is the predominance of the nucleus area over the area of the cytoplasm; - V - class of maturing cells; VI-class of mature cells with a limited life cycle [22, 32].

It is proved that red bone marrow is the only organ in which two different types of stem cells coexist and functionally interact [25].

In the body of an adult there are red and yellow bone marrows. The red bone marrow is actually a hematopoietic part of the bone marrow. The yellow bone marrow is in the bone marrow cavities of the diaphyses of the tubular bones. It is a degenerated reticular tissue whose cells contain fatty inclusions. Yellow bone marrow is an important reserve for red bone marrow [31]. At the blood loss it is settled with hemopoietic cells and it turns into a red bone marrow. Thus, the yellow and the red bone marrows can be considered as two functional states of one hematopoietic organ [22].

Resume

Summing up the above data from the researches, it can be argued that bone marrow is one of the main values of our body which controls and maintains the normal functioning of a man. After all, a constant renewal of blood components takes place precisely in the bone marrow - the process of formation of new blood cells of three types: erythrocytes, platelets and leucocytes. And the presence in its composition of stem cells that can turn into cells of any organ or tissue inherent in this organism is a second unique characteristic of the bone marrow.

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Реферати

МЕДИКО-СОЦІАЛЬНА ПРОБЛЕМА ГЕМАТОЛОГІЧНИХ ЗАХВОРЮВАНЬ НАСЕЛЕННЯ УКРАЇНИ

Попадинець О. Г.

Центальним органом кровотворення та імунного захисту є червоний кістковий мозок, який містить не тільки стовбурові кровотворні клітини, але й формує унікальне мікрооточення для їх проліферації і диференціювання. Саме він регулює вихід в периферичну кров зрілих формених елементів крові. Патологічними відхиленнями в системі крові вважаються збільшення або зменшення кількісного складу окремих клітин, а також зміни їх співвідношення відносно один до одного, або ж зміни їх форми.

Ключові слова: червоний кістковий мозок, хвороби системи крові, стовбурові клітини.

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МЕДИКО-СОЦИАЛЬНАЯ ПРОБЛЕМА ГЕМАТОЛОГИЧЕСКИХ ЗАБОЛЕВАНИЙ НАСЕЛЕНИЯ УКРАИНЫ

Попадинец А. Г.

Центальным органом кроветворения и иммунной защиты является красный костный мозг, который содержит не только стволовые кроветворные клетки, но и формирует уникальное микроокружение для их пролиферации и дифференцировки. Именно он регулирует выход в периферическую кровь зрелых форменных элементов крови. Патологическими отклонениями в системе крови считаются увеличение или уменьшение количественного состава отдельных клеток, а также изменения их соотношения отношению друг к другу, или же изменения их формы.

Ключевые слова: красный костный мозг, болезни системы крови, стволовые клетки.