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**ТРАНСПЛАНТАЦІЯ СТОВБУРОВИХ КЛІТИН КІСТКОВОГО  
МОЗКУ**

*Анотація:* У статті розглядається походження, визначення, перспектива і роль трансплантації кісткового мозку, як спосіб лікування різних патологій.

*Ключові слова:* трансплантологія, трансплант, пересадка кісткового мозку

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**TRANSPLANTOLOGY OF BONE MARROW STEM CELLS**

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*Abstract:* The article deals with the origin, definition, perspectives and role of transplantation of a bone marrow as a way of the treatment of various pathologies.

*Key words:* transplantology, transplants, bone marrow

Nowadays transplantation plays a significant role in the treatment of various pathologies. One of the most progressive types of it is transplantation of bone marrow.

History of bone marrow transplantation originates from the last decade of the 19th century. D. Brown-Sequard, A. d'Arsonval, M. Fraser, E. Billings and E. Hamilton are considered to be the founders of this phenomenon. They used extract of animal bone marrow in order to treat various types of anemia which had positive effect. However, this technique hasn't been actively used or even recognized until 1939. The first transplant surgery was made by U. Thomas in the middle of the last century and it was the first step to the universal recognition and further development of this branch of transplantology.

Bone marrow is a specific substance which produces blood cells of different types. It is located in the sternum, skull bones, pelvis, ribs and spine.

During the transplantation of bone marrow abnormal bone marrow of a patient is destroyed with radiation and instead of it a healthy one is injected into the bloodstream. In case of successful outcome the transplanted bone marrow migrates to the cavities of large bones, settles down and begins to produce normal blood cells. In most cases bone marrow is taken from the pelvic region.

Depending on the acceptor of bone marrow there are allogenic and autologous ones. Allogenic is a person who accepts someone else's hematopoietic stem cells. Autologous is a donor and a recipient concurrently. This is one from whom these hematopoietic stem cells are removed and to whom they are transplanted again but after some period of time. It is possible if remission takes place or when the condition requiring treatment doesn't affect bone marrow.

The result of transplantation depends on age, physical condition and stage of the disease. All this is taken into account when the decision about transplantation is made for a patient.

Transplantation of bone marrow is used to treat rather complex diseases, such as some forms of cancer, for example leukemia, lymphoma, breast or ovarian cancer. Thus in 2007, American citizen Timothy Brown recovered not only from leukemia but also from AIDS due to such surgery. This fact confirms that this branch of medicine has great prospects and in some years may help us to get rid of the most severe diseases on our planet such as cancer, AIDS and HIV.