Results of the research. It's established, that one of the most effective method of anti-aging therapy is using stem cells and placenta extract for rejuvenate the body. After injection of stem cells, they move to the damaged organs and provide powerful renovation of biological structures, normalize metabolic processes, which lead to the updating of the body's immune status, activating antitumor factors. Thus, it was found that the injection of cell suspension to the body leads to an increase in the number leukocytes in cancer patient's organism, with chemoradiation depression of hematopoiesis from 2 to 5 thousand in two weeks. Revitalization (rebounding) is the latest method of rejuvenation. Using the latest advances in the molecular and cellular biology, we can update and rejuvenate cellular composition of the aging organs without altering and damaging them. Revitalization's aim is slowing down aging and restoring of the whole organism to its' last, biologically young and active functional level. We can observe the increase of sexual function, libido and potency. After Injection of stem cells and placenta extract into the body, double effect can be observed. Injected cells begin work intensively, regenerating and "revitalizing" aging organs and tissues. Besides they also launch a mechanism, which helps to rejuvenate and activate the stem cells already existed in the body.

Conclusions. Using of stem cell based biological products, which contain low molecular weight proteins, hormones and human growth factor is an effective method of the multifunctional rejuvenation of the body and prevention of the premature aging. They normalize and stimulate metabolism, increase the activity of the immune and neuroendocrine systems, have expressed antitumor effect and therapeutic effect at various pathologies.

PROSPECTS FOR THE CREATION OF FETOPLACENTAL DRAGS

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Introduction. In modern clinical medicine, fetoplacental drugs (FPD) have been used since the first quarter of the XX century. This is a promising group of drugs, which include embryonic tissues of the tissue of the fetoplacental complex. The fetoplacental complex includes a set of tissues of the fetus, placenta and amniotic membranes. The healing properties of the placenta were known in ancient Egypt, but progress in this field of pharmacy has become possible only in recent years.

Aim. Identification of prospects for the creation of an FPD for use in clinical practice.

Materials and methods. The biochemical composition of the placenta and peculiarities of the use of FPD are analyzed. In the placenta, more than 4.000 different proteins are identified, including growth factors, cytochromes, fibrinolysis factors, enzymes of energy metabolism, prostaglandins, enkephalins, neuropeptides, and trace elements.

Results and discussion. FPDs are divided into two groups: preparations containing extracts from the fetoplacental complex and preparations of stem cells derived from this complex. The first group FPD is widely used in modern medicine and cosmetology. They are the product of placental processing, their main active substances are placental proteins, amino acids, glycosaminoglycans, hormones. The drugs in this group exhibit adaptogenic, reparative, anti-inflammatory, antioxidant analgesic and anti-stress properties of FPD of the second group are administered to patients immediately after receiving cells from the embryo and fetoplacental complex or after storing them in the cryobank. Unlike other tissues, embryonic, fetal, and placental tissues have an inherent immune tolerance, that is, FPDs do not cause rejection reactions. FPD is used in the treatment of Alzheimer's, Parkinson's, Huntington's disease, atherosclerosis, myocardial infarction, hepatitis, leukemia, rheumatoid arthritis retinal degeneration, consequences of stroke, diabetes, HIV and other diseases. The development of FPD-based therapy are limiting by the moratorium on stem cell use, that has been in force in Ukraine since 2004.

Conclusions. A review of the results of the studies showed high efficacy of FPD in the treatment of diabetes, blood and liver diseases, oncological, neurodegenerative, as well as the accompanying effects of cell transplantation associated with improving psycho-emotional state, disappearance of chronic insomnia and fatigue, increased sexual function in men and women, slow dawn aging etc.

MODERN METHODS OF CYSTIC FIBROSIS TREATMENT

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Introduction. Cystic fibrosis (CF) is the most common hereditary disease with an autosomal recessive mode of inheritance, universal multisystem exocrinopathy. Cystic fibrosis gene is Cystic Fibrosis Transmembrane conductance Regulator (CFTR) that was mapped and cloned at 1989 year. The protein encoded by this gene is an epithelial cell membrane protein. Its main function is to regulate the transport of chloride channel ions through the cell membrane. The presence of a defective gene leads to increase of the mucus viscosity of the excretory glands. Primarily it is manifested by pathology from the respiratory and digestive systems.

Aim is to study modern methods of cystic fibrosis treatment from the position of etiopathogenesis.

Materials and methods. The regulatory and scientific sources of Ukraine, Russia, the EU, Israel, and the USA about the questions of the cystic fibrosis treatment have been analyzed and compared.

Results and discussion. Treatment of patients with cystic fibrosis in most countries is provided according to protocols that are approved at the state level. In Ukraine the treatment depends on the Unified Clinical Protocol (approved by the Order of the Ministry of Health of Ukraine on July 15, 2016 No. 723). It has a symptomatic and pathogenetic character and is provided throughout life with the use of Pancreatin replacement enzyme therapy, daily activities by the dilution viscous sputum and clean the patient's bronchial ways from it, with antibacterial therapy of respiratory tract infections. Modern methods of CF treatment include drugs of gene therapy and modulators (correctors and potentiators).

Gene therapy is a group of methods basic on transferring nucleic acids (DNA and RNA) into cells in order to replace a defect caused by a gene mutation. Recombinant adenoviruses, adeno-associated vectors, liposome-mediated CFTR gene transfer use as modern vectors for transferring the normal CFTR gene into the cell. They can be carried to the target organs (lungs) through inhalation

Also in recent years, drugs from the group of modulators (correctors and potentiators) have widely distributed. They compensate for the effects of mutations and are essentially the drugs of pathogenetic therapy. Correctors improve the maturation of CFTR protein, potentiators increase the probability that the defective channel will be open and allow chloride ions pass through the channel pore.

The first drug of this group is Ivacaftor (VX-770, Kalydeco). It is the potentiator, that increase the opening of the CFTR ion channel on the cell membrane through activation of adenylate cyclase way.

The main mechanism of corrector’s action is to improve the maturation of the CFTR protein through direct binding to it, or through adaptation of protein homeostasis and a decrease in protein degradation. The most famous corrector is Lumacaftor (VX-809). It was found that this medicine stabilizes the CFTR protein and increases its movement to the surface of the cell membrane. Also it is able to partially restore the function of the protein through stabilizing the N-terminal domain of the CFTR protein. However, monotherapy of Lumacaftor leads to a slight decrease in chlorides level in the sweat test. Therefore, an important event in the treatment of CF was the opening of the combination drug Ivacaftor/Lumacaftor (Orkambi) in 2015. The combination of a potentiator and a corrector made it possible to get a clinical effect in patients with the most common mutation by cystic fibrosis – a deletion of phenylalanine in position 508.