**УДК 616-092:612.66**

**MODERN LOOK AT THE THEORY OF AGING**

**OGNEVA L.**

Kharkov National Medical University

Department of Pathological Physiology D.E. Alpern.

Relevance. This process has been a matter of concern to humanity since ancient times: Described as a phenomenon in religion, inspired fear or pride in its years. They began to study the aging process back in the 19th century. Weisman already had a certain idea of the involution of the body, but the relevance of the study was fixed much later. There is no single theory of aging. This is due to the fact that different scientists have different opinions on the basis of their research. Their work explains the mechanisms and causes of aging.

Research methods. Collection of information based on literature, laboratory data and empirical evidence; forming conclusions about modern research of aging.

Results of the research. Many factors cause irreversible processes in the body, there is a decrease in regulatory and adaptive mechanisms, resistanceб starting from the molecular to the organismal level. Gerontologists study this to slow down aging or prevent at all, but now it’s not possible. Studying a separate population, gerontologists consider the living conditions and on this basis distinguish physiological and accelerated aging. With physiological aging, individuals age in a timely manner, using their adaptive and regulatory capabilities. With accelerated aging, there is a decrease in the body's resistance within a certain age. Involution leads to a slow metabolism, to the reduced consumption of oxygen, the proportion of micro - and macroelements changes: the amount of potassium, phosphorus, magnesium, but an increase in calcium, sodium, chlorine is observed. Calcium is found on the walls of the vessels in the form of deposits, which reduces their lumen, heart activity is reduced, in the kidneys there is the development of connective tissue, this characterizes dystrophy, the production of enzymes in the gastrointestinal tract is reduced, nerve tissue and reproductive system wears out, the transformation of the lymphoid tissue into a connective tissue reduces the immune response, cells are dehydrated. Scientists associate this with the genetic mechanism. Some think that genetic programming plays a leading part, others are considered to be dominated by random mutations. The free-radical theory of aging, described by Danchen Harman and Nikolai Emmanuel. The main problem is the passage through the cells of a very large amount of oxygen, which is used for cellular respiration, ATP. But part of it remains unused and goes to the construction of active forms of oxygen (hydrogen peroxide, ozone, etc.). These substances enter into chemical reactions with proteins, lipids, carbohydrates, DNA. As a result, mitochondria are damaged. A small part of the oxygen is used to build toxic substances, but they are inactivated by enzymes of the antioxidant system. If this system is damaged, aging occurs. There are other theories: The theory of cross-section, telomeric theory (L. Heiflik), Vladimir Dilman's Eleuational theory, Leonard telomeric theory of aging, the theory of apoptosis of Vladimir Skakulaev, who believes that aging is due to the accumulation of unprocessed substances, which leads to a violation of its life. As a result - violation of elasticity of skin, vessels, lungs. The organism can manage with these substances, but this requires a lot of energy.

Conclusion. Currently, many medicines are being developed "from old age", they include antioxidants, as well as substances that destroy sugar-protein stitching. But, it is not yet possible to prevent the complete apoptosis, shortening the end sections of chromosomes and other destructive processes, scientists work hard on this.