**A. V. Hrankina, A.V. Aleksandrova**

**Statins against cellular aging**

Kharkiv National Medical University, Kharkiv (department of Pharmacology and medical recipe)

Relevance. Statins in modern medicine are commonly used for reducing the probability of heart attack and stroke in patients of risk group. Their effect is due to blocking the hepatic enzyme, which is involved in cholesterol synthesis.

According to European researchers, statins can slow the rate of telomere shortening of chromosomes in laboratory mice - which means that they can be potentially used as means against cellular aging.

Results of the study. Drugs of the statin class do not only prolong the human life by reducing the concentration of cholesterol in the blood and the risk of cardiovascular diseases, but they also increase the life span itself. In particular, statins may reduce the rate of reduction in telomere length, a leading factor of natural aging.

Normally, each time a cell divides the telomeres (end portions of chromosomes) are shortened (the so-called end underreplication). As a result of the enzyme telomerase, which adds the recurring sequences to the end of DNA chain on telomeres, telomere length of chromosome cells is increased or maintained at the constant level, allowing the cell to divide indefinitely long. Ordinary somatic cells of the body are deprived of telomerase activity. Telomerase is expressed in stem, sex and some other types of the body cells, which can be divided constantly.

A study has been conducted with two groups of patients (V. Boccardi, M. Barbieri, 2013),. Patients of the first group took statins for a long time; patients of the second (control) group did not take any medication. Scientists measured telomerase activity in all patients. Results showed that in patients treated with statins, telomerase activity in white blood cells was higher compared to the patients of control group.

Conclusions. The most important positive feature of statins is their ability to reduce the risk of cardiovascular disease by inhibiting telomerase significantly, while the use of these drugs is safe for most people. According to researchers, the negative properties of using statins are associated with the development of side effects, for example, with muscle damage. If it is confirmed that statins may slow the aging process itself, not only its symptoms, they will be more powerful drugs than it might have been expected.