МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ
КАФЕДРА ІНОЗЕМНИХ МОВ
ЛІНГВІСТИЧНИЙ НАВЧАЛЬНО-МЕТОДИЧНИЙ ЦЕНТР

МАТЕРІАЛИ
X ВСЕУКРАЇНСЬКОЇ НАУКОВО-ПРАКТИЧНОЇ КОНФЕРЕНЦІЇ СТУДЕНТІВ, АСПІРАНТІВ ТА ВИКЛАДАЧІВ ЛІНГВІСТИЧНОГО НАВЧАЛЬНО-МЕТОДИЧНОГО ЦЕНТРУ КАФЕДРИ ІНОЗЕМНИХ МОВ

"WITH FOREIGN LANGUAGES TO MUTUAL UNDERSTANDING, BETTER TECHNOLOGIES AND ECOLOGICALLY SAFER ENVIRONMENT"

(Суми, 24 березня 2016 року)
The tenth all Ukrainian scientific practical student`s, postgraduate's and teacher's conference

METHODS FOR DETERMINING THE HOMOGENITY OF AORTIC WALL CALCIFICATIONS

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Cardiovascular diseases in Ukraine amount to 65.8% of deaths. The part of their prevalence and incidence in the structure of diseases among the population is 31.5% and 7.4%, but it reaches 52.1% and 20% among people of retirement age. Cardiovascular diseases include myocardial infarction, stroke, and aneurysm of vessels. Calcified plaques on artery walls that prevent normal blood supply of the myocardium and brain are the most common causes of heart attack and stroke. Calcification of vessels may cause their aneurism. In particular, the presence of abdominal aortic aneurism during a year can be a cause of a sudden death. That's why the study of the research methods of calcifications, their composition and the process of depositing in the wall of blood vessels are topical.

The objective of the research is to find out the features of location of the calcified deposits in the walls of the aorta and the extent of its heterogeneity. The study of the extent of homogeneity of the calcification of vessels' membrane was held with the use of gravimetric weighing of the samples dried under the following temperatures: 18°C, 40°C, and 100°C. Each sample was divided into four parts. Each part of calcified aorta was weighed after drying at thermostat. The selected temperature range allows determining the mass fraction of free water with different bind force. To determine the extent of homogeneity the following formula was used: $H=\Sigma(|x-\bar{x}ni=1|)$; where H stands for the extent of heterogeneity, x stands for the percent of water loss in the sample, $\bar{x}$ stands for the arithmetical mean of the percent of water loss in all samples.

The research showed that the average water content was 67%. The extents of heterogeneity 14.2 and 7 show that calcified aorta loses water irregularly. Accordingly, the first part of the sample was more calcified than the others. This is confirmed by the amount of evaporation of water data: in the first sample it constitutes the smallest part – 52%, when in the other two samples it constitutes 69% and 75% resp. The data about the water fractions part show that the pathological bioapatite is unequally distributed in the walls of a vessel.

The following method of studying the homogeneity of pathological biomineral can help to determine the mechanism of depositing of calcificates in the walls of vessels, and that will be a step forward to finding an effective method of diagnosis and treatment of vascular calcification

SINGLE NUCLEOTIDE POLYMORPHISM DETERMINATION BY PCR METHOD IN ORDER TO OPTIMIZE THE DOSING OF ORAL ANTICOAGULANTS

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The polymerase chain reaction (PCR) is a technology in molecular biology used to amplify a single copy or a few copies of a piece of DNA across several orders of magnitude, generating thousands to millions of copies of a particular DNA sequence. Nowadays scientists widely use PCR method to identify single nucleotide polymorphisms (SNP). SNP is a variation in a single nucleotide that occurs at a specific position in the genome, where each variation is present to some appreciable degree within a population. Such variations may fall within coding sequences of genes, non-coding regions of genes, or in the intergenic regions, and in this way they may influence the qualitative or quantitative characteristics of the mature proteins. SNPs in the DNA sequences of humans can affect how humans develop diseases and respond to pathogens, chemicals, drugs, vaccines, and other agents. SNPs are also critical for personalized medicine.

Each year, millions of people take warfarin and other coumarins, which together form the group of oral anticoagulants. Although these vitamin K antagonists are remarkably effective at preventing cardioembolic stroke, myocardial infarction, and venous thrombosis, they double the incidence of hemorrhage. The hemorrhage risk is greatest during the first weeks to months of therapy. To reduce this risk, experts advocate prescribing the anticipated therapeutic dose to patients who are beginning warfarin, but until now there was no accurate way to estimate that dose. By using pharmacogenetics-based warfarin therapy, clinicians can now