effect in a multicellular model with the help of a group of cells that were marked. Small distribution area of beta-particles only causes the defeat of labeled cells and unlabeled cells are not subject to radiation exposure. However, as a result, the unlabeled cells are also affected.

In 1997 K. K. Mazersil and Seymour found that the substances of the cytoplasm of the irradiated epithelial cells had a damaging effect on unirradiated cells. This fact proved that gamma radiation can cause "bystander" effect and opened a good way to study this effect in human cells. An intensive research on this phenomenon and, in particular, of its mechanisms began. There is evidence of at least two independent ways of information transfer from irradiated cells of non-irradiated: 1) through cell-cell interaction and 2) via the cellular factors that are excreted into the culture medium.

Bystander effects are measured by the induction of gross genome rearrangements, chromosome aberrations, sister chromatid exchanges, deletions, duplications, mutations and amplifications, and cell death.

Bystander effects were observed in the following cytoplasmic irradiation, demonstrating that the target for genetic events is not only the nucleus. Bystander effects also manifest themselves in the whole-organism context. Bystander effect is used in medicine for the treatment of cancer because besides efficient killing of targeted tumor cells, neighboring, non-transduced cells are killed as well.

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PROGNOSIS OF PATIENTS WITH ISCHEMIC HEART DISEASE AND HYPERTENSION

In the Republic of Belarus there is a high prevalence and intensity of human diseases associated with coronary heart disease and hypertension. The most common form of coronary artery disease is angina pectoris. Survival of patients with angina is characterized by the wide variability that is due to heterogeneity of patients in the observed groups. Left ventricular hypertrophy, hypertension, and congestive heart failure are the related factors which influence the life prognosis of the patients with angina.

The aim of the study is the disease course assessment and the prognosis of the patients with ischemic heart disease and with stable angina and hypertension.

The studies were conducted in Clinic 12 in Gomel on a sample of 40 patients diagnosed with "Ischemic Heart Disease: stable exertional angina. Hypertension". For risk assessment of fatal outcome of a cardiovascular disease, the SCORE scale (Systematic Coronary Risk Evaluation) has been used for 10 years to assess the impact of the existing risk factors and the baseline clinical and different instrumental parameters on the state of patients with the coronary artery disease.

According to the method, it is possible to identify 4 groups of risk of developing cardiovascular complications:

Group 1 or the group of low-risk means that the possibility of the development of cardiovascular complications in the following 10 years is less than 15%.

Group 2 or the group of average risk implicates the risk of complications in the following 10 years, and the risk is 15–20%.

Group 3 or the high-risk group stands for 20–30%.

Group 4 or the group of very high risk means that in the following 10 years the risk of complications is higher than 30%.

Risk Stratification is held separately for men and women.

According to the studies, the risk of cardiovascular complications for the entire sample is high and very high. What is more, in men 50% of patients have very high risk, while in women 25% is considered to be a very high risk.

Reliable indicators affecting the risk of severity were the functional class of angina, the degree of hypertension, the presence of concomitant cardiovascular diseases, and organ damage.

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COMPARATIVE MASS SPECTROMETRY ANALYSIS OF HbA_1 AND HbA_2 HEMOGLOBIN TETRAMERS

Tetrameric human hemoglobin (HbA) is an ensemble of two dimers formed and a pair α- and β- subunits, each containing a heme *b* (Fe - protoporphyrin IX). The interest in the study of its properties is due not only to the huge role of hemoglobin in respiratory physiology, but also to the fact that, being relatively simple in structure, it serves as an excellent model for the study of nonlinear and cooperative interactions in proteins that are composed of several subunits.

The interest in the study of certain types and forms of human hemoglobin is determined by the diagnostic value as markers of a number of pathological conditions. Many important characteristicof pathological conditions are described, which is not only a change in the number of total hemoglobin in the blood, and the redistribution of the content of certain of its types.

In this paper, column anion exchange chromatography on DEAE-Sepharose was used for preparative amounts of principal (HbA_1) and minor (HbA_2) forms of human hemoglobin.

The results showed that in both analytical and preparative embodiments, isolation and purification of the main and minor forms of hemoglobin person order eluting forms hemoprotein and the main parameters of the chromatographic separation on a column of DEAE-Sepharose correspond to the characteristics of behavior of