

RADIATION MEDICINE

Guidelines for the 2nd year students (Faculty for International Students)

LESSON №7: RADIATION INJURY OF THE HUMAN ORGANISM. DETERMINISTIC AND STOCHASTIC EFFECTS OF IRRADIATION

THE AIM: to get acquainted with the medico-biological effects of radiation;
to study the association of dose with the degree of severity of the clinical syndromes;
to master the principle of working with alpha - and beta, gamma – spectrometer;
to perform laboratory work.

DURATION: 3.0 hours.

PLACE: student's workshop.

EQUIPMENT: methodical grant, tables, PowerPoint presentation, tasks according to the topic.

Required theoretical knowledge

1. The factors that determine the lesions of the body. The concept of "critical organ".
2. Characteristics of bone - marrow syndrome: pathogenesis, phases, causes of the organism death.
3. Characteristics of gastrointestinal syndrome: pathogenesis, causes of the organism death.
4. Characteristics of cerebral syndrome: pathogenesis, causes of the organism death.
5. Deterministic effects of irradiation: concept, types, dependence on the irradiation dose, period of development, characteristic effects, pathogenesis.
6. Stochastic effects of irradiation: concept, types, dependence on the radiation dose, period of development, characteristic effects, pathogenesis.
7. The concept of «small doses» of ionizing radiation. The effects of «small doses» of ionizing-radiation on the human body.

Laboratory (individual) work of students

1. Get acquainted with the principle of work alpha - and beta - spectrometer MKC-AT1315.

Literature

Basic:

1. Radiation medicine : учебное пособие для иностранных студентов учреждений высшего образования : допущено Министерством образования Республики Беларусь / А.Н. Стожаров [и др.]; под ред. А.Н. Стожарова. – Минск: Новое знание, 2020. – 203 с.

Additional:

1. Мойсеёнок, Е.А. Лекции по радиационной медицине (в таблицах) = Lectures on Radiation Medicine (in tables): пособие для студентов факультета иностранных учащихся (на английском языке) [изд. на CD-дисках] / Мойсеёнок Е.А. – Электрон. текст. дан. и прогр. (объем 29 Мб). – Гродно: ГрГМУ, 2012. – 1 электрон. опт. диск (CD-ROM).
2. Radiation and Ecological Medicine: Electronic Educational and Methodological Complex. Access: <http://edu.grsmu.by/course/view.php?id=99>