CONCLUSION

You have studied the basic principles of radiation diagnosis and radiotherapy. Knowledge you have received will be necessary in future while studying clinical disciplines (medicine, surgery, urology, oncology). As you have noticed there is diagnostic minimum of radiologic examinations (primary radiologic examinations) essential for diagnosing various diseases. The objective of such examination is to identify the most common pathologies and determine the methods of further examinations including radiological ones. It is very important to specify indications and contraindications for radiological research correctly. Radiation diagnostics currently includes x-ray (as well as computed tomography), radioisotopic, ultrasound, magnetic resonance examination methods.

We should turn attention to fundamental technical upgrade of these disciplines in recent years and their increased importance. In radiation therapy for the proper guidance of radiotherapy radiation images are also used which helps to carry out the dosimetric planning.

Modern hi-tech methods of radiation diagnosis allow physicians to get much information about anatomical and pathological structures. For example, magnetic resonance tomography or multislice spiral computed tomography can carry up to 1-2 gigabytes of data in more than one thousand images. However, the major radiological examinations include conventional x-ray and ultrasound methods of diagnosis.

In this regard, learning objectives for students were: 1) the use of diagnostic imaging and radiation therapy in clinical practice; 2) determining the indications and contraindications to radiation examination and treatment; 3) distinguishing basic symptoms and syndromes in diagnostic images.

To meet the challenges of radiodiagnostics training it is important to understand and consider the features of modern radiological images. Radiographs (one or two) represent completed independent radiological examination, while multisection imaging techniques (ultrasound, computed tomography, magnetic resonance imaging, single-and two-photon computed tomography) are series of hundreds or even thousands of images. Within the undergraduate training course a student should independently examine an X-ray image, make the radiologic examination report, detect radio-anatomical structures and X-ray syndromes characteristic of most common diseases.

Concerning the multisection imaging techniques students are recommended to detect anatomical structures and main radiation syndromes using a limited series of images for each study with the most informative data and protocol of radiation examination drown up by an expert. Such an approach to the imaging analysis, on the

one hand, helps to define the requirements to students' skills more clearly, and on the other hand, reflects the real situation in medical practice.

At the same time, efforts should be made to encourage the desire of students to deepen knowledge in modern technologies of radiation diagnostics. The best way to achieve this is introduction of student scientific work.

In the chapter devoted to radiation therapy physical and biological basics, methods and planning of radiation therapy, possible radiation injuries during radiation therapy and radiology were presented. Modern trends in radiation therapy are associated with the development of more sophisticated methods of dose delivery to the pathological focus.

Those who will work as radiologists or radiation oncologists will study the relevant disciplines in detail during the postgraduate course.