

Mononuclear cells were isolated from peripheral blood of healthy donor by histopaque density centrifugation and cultured in three cell culture flasks with IL-2, IL2+ K562* and IL2+ FD-21*. NK cell proportion was estimated by flow cytometry with CD3 and CD56. The rate of cells expansion was measured three times through two-week culture, on day 7, 10 and 14. After 7 days re-stimulation with feeder cells was repeated. After 14 days culture, the expansion of NK cells was 600 folds in the flask which contain IL-2 and K562* and 2070 folds in the flask which contains IL-2 and FD21*. In the IL-2 only culture no significant expansion was observed. In the initial MNC sample, the lymphocytes were 80% and among them 9.9% NK cells. By the end of the second week 90-95% of all cells in culture were NK cells.

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THE USE OF ULTRASOUND IN THE BRACHYTHERAPY OF CERVICAL CANCER

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The thesis purpose is to discuss the use of ultrasound in the practice of brachytherapy, the manipulations performed with this apparatus, and the use of ultrasound to plan patients with cervical cancer.

Keywords: brachytherapy, cervical cancer, skin cancer, Ultrasound.

Currently, for the brachytherapy of cervical cancer, MRI or CT images are used to visualize the clinical volume of the target and critical organs for irradiation. However, the calculation of radiation dosimetry plans based on two-dimensional X-ray images is still conducted in a significant number of brachytherapy departments all over the world. This situation is because of limited availability of X-ray or magnetic resonance tomographs in regional oncology centers and that fact that in some clinical cases it is impossible to conduct an examination on tomographs. However, visualization of soft tissues during brachytherapy increases the accuracy of treatment planning, which in turn leads to improved local control and reduced toxicity for healthy organs. It is required to find a method of obtaining an image of soft tissues, which will be more accessible and will shorten the time necessary to prepare the patient for treatment. Ultrasound meets these requirements and allows to obtain images of the patient's soft tissues in the shortest possible time with the located applicator directly during installation, and also reduces the time of patient preparation because there is no need to transport the patient to the tomograph. Obtaining ultrasound images during the introduction of the applicator allows to reduce the time of patient treatments, as well as to avoid possible complications associated with improper setting of applicators. Low cost, as well as the simplicity and mobility of ultrasound devices allows the use of ultrasound images for each application and brachytherapy treatment planning.

The use of ultrasound in the brachytherapy department of N.N. Alexandrov National Cancer Center of Belarus from the beginning of 2016 significantly reduced the possibility of complications associated with improper implantation of applicators and to plan treatment with visualization of soft tissues in the absence of the possibility of obtaining tomographic images.

ALLELIC COMBINATIONS OF VDR, COL1A1, COL1A2 GENES IN BELARUSIAN WOMEN WITH POSTMENOPAUSAL OSTEOPOROSIS

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Postmenopausal osteoporosis (PO) is a common, multifactorial disease with a pronounced genetic predisposition. Identification of allelic combinations and haplotypes of variants of bone metabolism genes will allow to