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Role of the Center for postgraduate education in training staff for the cancer service of the Republic of Kazakhstan

Relevance. *Worldwide, lung cancer is the most common cancer and the main cause of death in the structure of oncopathologies. In the Republic of Kazakhstan, lung cancer is also the most common form of malignant neoplasms. It ranks second in incidence and first in the structure of mortality from oncopathologies.*

Purpose of the study *was to evaluate the possibilities provided by low-dose computed tomography (CT) in early diagnostics of lung cancer.*

Results. *This paper presents the results of low-dose CT examination of 908 patients conducted at the East Kazakhstan Regional Cancer Dispensary.*

Conclusion. *The obtained results prove a high informative value of low-dose CT examination in early diagnostics of lung cancer.*

Keywords: *lung cancer, low-dose computed tomography.*

Relevance. According to ,GLOBOCAN 2018 global statistics, lung cancer is the most common cancer (11.6% of the total number of cases) in both sexes and the main cause of death in the structure of cancer pathology (18.4% of the total number of deaths from cancer). In 2018, 2.1 million new cases of lung cancer and 1.8 million fatal cases were reported [1].

In the Republic of Kazakhstan, lung cancer is also the most common form of malignancy; it ranks second in incidence and first in the structure of mortality from oncopathologies over the past twenty years. High incidence and mortality from lung cancer compared with the national average is observed in the East Kazakhstan region (35.6%000 and 25.5%000, respectively) [2].

Clinical manifestations in lung cancer indicate the prevalence of the tumor process. The use of highly informative methods of examination is very important for early diagnostics of lung cancer in risk groups during the asymptomatic coursea of the disease [3].

According to the published results of two large randomized studies of lung cancer screening using low-dose computed tomography (LDCT) examination, the use of LDCT reduces the lung cancer mortality by 26% in the high-risk group [4,5]. However, despite this, not all countries who conduct screening have achieved such high rates [6]. According to some researchers, early diagnostics of lung cancer using LDCT requires major improvements both in the organization of the screening process and in the formation of risk groups [7].

Materials and methods. 908 residents of East Kazakhstan region (women – 56.6%, men – 43.4%; aged 18 to 89 years, average age – 54.7±12.6) underwent LDCT-examination of lungs using Revolution 128 (GE) computer tomograph with 1.25 mm slice thickness at 120kVp and 10mAs. The effective dose per patient did not exceed 1 μSv.

The results were interpreted by the physicians of the Kazakh Institute of Oncology and Radiology, Radiodiagnostics Department.

All examined subjects were questioned to define possible risk factors.

The findings were assessed in accordance with LUNG-RADS classification.

Findings and discussion. 30.2% of examined subjects had changes in the lungs according to LDCT results: pulmonary nodules of various shapes and sizes – 14.8%, 4.7% of them were suspicious of malignancy; multifocal lung lesion specific for a metastatic lesion – 0.4%; typical benign lesions – 0.6%; meta-tuberculosis changes – 4.6%; chronic bronchopulmonary diseases – 9.8%.

91 (10.1%) patients were recommended to undergo a follow-up dynamic CT after 3 to 12 months.

The analysis of questionnaires has shown harmful labor conditions in 25.8% of cases. Smokers accounted for 35.5% (of them, 86.3% men and 13.7% women); they had an average smoking history of 31.2 years and smoked an average of 0.86 packs of cigarettes per day.

Smokers accounted for 65.1% in the group of patients with detected lesions suspicious of malignancy.

The youngest patient (non-smoker) with a verified stage 3a lung cancer was 38 years old (born in 1980); the oldest patient with verified lung cancer was 72 years old (born in 1946).

Conclusion. The preliminary analysis of LDCT results has shown a high informative value of this method in the early diagnostics of lung cancer.

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