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CANCER MORBIDITY CAUSED BY THE ECOLOGICAL SITUATION IN ZHYTOMYR REGION

Economic situation and the quality of the environment influence the health of the population. In recent years the number of patients with various diseases in Ukraine increased by 25%, the total population was reduced to 4 million people. Cancer (onco) morbidity is steadily increasing by 3% per year. The highest cancer morbidity is in Kirovograd, in Mykolayiv and in Odesa regions compared to the average in Ukraine. The lowest morbidity of malignant neoplasms is in Zakarpatia, Volyn, and Chernivtsi.

Today the world's environment is polluted by many harmful substances and chronic exposure of the population by low doses of radiation can not be ignored when assessing the overall morbidity and determining the reasons which cause it. Therefore, there is a question of dose accumulation and evaluation of the impact of radiation on the health of the population. It was established that various harmful biological effects of radiation are caused not only by the action of high doses. Most scientists believe that there is no innocent dose of radiation and even small doses can cause various diseases. Ionizing radiation was determined to act not only as an inducer of carcinogenesis, but also as its accelerator. Therefore, if the first stage of carcinogenesisis induced chemically, the radiation can play the role of "the last drop".

While assessing radiation effects on human health in Zhytomyr region, the carcinogenic effect of exposure was selected as the main indicator of the cancer morbidity. The main artificial sources of people radiation exposure on the territory of Zhytomyr region are the soils contaminated by emissions after Chernobyl accident (radionuclides transported by wind and river washout) and radiation emissions in the process of natural stone extraction. Besides, such medical procedures as X-ray and radio diagnostics can also be the source of overexposure. According to the radiological studies conducted in the region, the average total dose of external and internal radiation exposure is 6,7 ± 2,5 mSv / year. Data of oncology morbidity were taken from materials of the annual health statistics for the period of 2010-2014.

Oncology morbidity

Some indicators	2010	2011	2012	2013	2014
The morbidity (per 100 thous. population.)	307,1	312,0	322,7	332,8	327,8
Advanced (III – IV visualized; IV - for all other localizations.) In%	23,2	26,1	24,5	26,8	26,6
The death rate (per 100 thousand. population)	176,2	182,5	184,1	190,2	194,4
Mortality beforeone year	30,8	30,8	29,2	25,8	27,4

From the above data it can be concluded that the number of cancer patients and the number of deaths per 100 thousand of population has increased over the years. There are a lot of advanced malignancies detected. People visit doctors to diagnose diseases too late. Unfortunately, it can be due to not only the imperfect system of health protection and bad clinical examination of the population, but also because of the growing rate of malignancies development. In the latter case we can assume a negative effect of radioactive contamination of human habitation.

In 2014 the average malignant neoplasm morbidity for the region was 327.8 per 100 thousand of population. The morbidity of rural population is 295.8 per 100 thousand of population and it is much lower than in town (350.6). Thus, the urban population is much more likely to suffer from cancer than rural. The growth of the mortality of malignant neoplasm is also observed. The greatest mortality per 100 thousand of population is noted in the following regions: Zhytomyr, Volodar Volynsk, Korostyshiv, and Olevsk.

Thus, we can conclude that the malignant neoplasm is one of the most dangerous medical, biological and socio-economic problems that are closely related to the environment. Cancer morbidity and mortality are increasing due to the unfavorable ecological situation and significant population aging. According to the World Health Organization, if the lifestyle of humanity does not come to any changes, by 2030 the number of cancer patients in the world will double in relation to today's indicators and it will be the main cause of people's death.