

SPECIALIZED CARE PROVIDED TO PATIENTS WITH RECTAL CANCER IN KYIV CITY

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The major trends in the rectal cancer incidence, detectability, morbidity, and mortality in Kyiv city as well as the state of medical care organization for cancer patients based on the statistical data of Kyiv City Clinical Oncology Center were analyzed. Despite the decrease in morbidity (–6.3%) and mortality (–8.1%), the cohort of rectal cancer patients in Kyiv city is increasing (+18.2%). At the same time, one-year mortality (27.0% in 2017), the detection rate at preventive check-ups, the detection rates at the early (I–II) stages are decreasing and at late-stage (IV) are rising (from 14.9% in 2011 to 17.6% in 2017). The above indicates the need for improving the organization of medical care of cancer patients and early diagnostics of rectal cancer.

Key Words: rectal cancer, morbidity, mortality.

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Cancer is among the leading causes of morbidity and mortality worldwide. Over the last 40 years, the list of the most common locations of malignant neoplasms has hardly changed, the most common of which are lungs, breast, intestines, prostate, stomach, liver, cervix, esophagus, and bladder. The first four (lung, breast, intestinal and prostate) types of cancer account for 42% of all cancer cases worldwide [1]. Every fourth EU citizen dies from cancer; annually 837,000 Europeans become the victims of cancer, and nearly 4 million new cancer cases are reported [2–3]. With growing global burden, cancer prevention and treatment is one of the most significant public health challenges of the 21st century.

In Ukraine, there are 165,000 newly diagnosed cancer cases annually. The most common cancers in men are lung cancer (23.0%), gastric cancer (11.5%), prostate cancer (7.0%), colorectal and pancreas cancer (11.0%) and in women — breast cancer (18.0%), non-melanoma skin cancer (15.0%) and gynecological cancers (8.0%). According to the cancer mortality statistics in Ukraine, in 2010–2016 almost ninety thousand people died annually, with 35% of them being the working-age persons. The number of cancer cases is prevalent among the population of the eastern and southern regions of Ukraine, the least in the western regions [4–5]. Every third cancer patient in Ukraine dies within a year following the diagnosis; the one-year mortality rate of cancer is 2–10 times higher than in the developed countries [6].

High incidence and prevalence of malignant neoplasms are stipulated by a complex of factors, including hereditary factor, environmental pollution, poor awareness of early cancer symptoms among the population. According to World Health Organization, malignant neoplasms are detected in almost every 50th individual in Ukraine, and in every 270th in the world [7].

The studies of current regional peculiarities of structure, morbidity rates, prevalence of oncological pathology among different sex-age groups of population, improved organization of medical care for such patients over the years are still topical, since the economic losses of the state due to cancer considerably outweigh the costs related to cancer prevention, development and introduction of new diagnostic technologies, treatment and rehabilitation. The aim of the present survey was to analyze the current state of the organization of medical care for patients with rectal cancer (RC) in Kyiv as an example of metropolis.

METHODOLOGY OF ANALYSIS

The major trends in the rectal cancer incidence, detectability, treatment and mortality as well as the state of medical care organization for cancer patients based on the statistical data of Kyiv City Clinical Oncology Center and the data compiled in the Bulletins of the National Institute of Cancer of Ukraine were analyzed. The study covers the period of 2011–2017.

RESULTS AND DISCUSSION

According to the Bulletin of the National Cancer Register of Ukraine (2017), the incidence of malignancies, as well as cancer-related mortality, prevails among men (392.5 in males vs 371.7 in females, and 218.3 in males vs 147.2 in females, respectively) [5]. The exception was Kyiv region and the city of Kyiv, where the prevalence of malignancies is higher in women, with a significant difference in Kyiv (355.4 cases in males vs 395.2 in females).

The percentage of newly diagnosed cancer cases in the age group of 30–54 years is higher among women (24.9% vs 17.8% in men), while in the age group of 55–64 years, it prevails among men (30.4% vs 26.0% in women). The above testifies to the delay in seeking the medical care, probable diagnosing at the later stages of the disease, which requires deeper study of the causes, first of all, in the field of improving the organization of medical care for the population.

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Abbreviation used: RC – rectal cancer.

It should be noted that for a long time a high percentage of newly diagnosed cancer cases during preventive check-ups in the city of Kyiv, both in 2011 (64.8%) and in 2017 (58.3%), as well as the percentage of newly diagnosed pathology at the advanced stage IV has been the lowest (7.7%), despite the fact that, over the same period of time, this index exceeded 20% in 12 out of 25 regions. The above suggests that the timely cancer diagnostics significantly depends on the organization of oncological care in the region, and especially on the quality and regularity of preventive work, in particular with the involvement of primary care physicians.

It is positive that in Kyiv the percentage of advanced cancer is gradually decreasing. For instance, if in 2011 advanced cancer was diagnosed in 991 (11.3%) out of 10,017 newly diagnosed cancer cases, in 2017 it was detected in 932 (9.65%) out of 10,868 of cases. In 2017, the percentage of advanced lung cancer (29.4%), cancer of oral cavity (26.9%), gastric cancer (22.3%), renal cancer (17.4%), breast cancer (16.4%), and rectal cancer (15.0%) remains high among the population of the capital.

Almost every second cancer patient registered in Kyiv in 2017 (58.27% or 5,629 persons) was diagnosed with cancer during a preventive check-up (Fig. 1, a). It should be noted that the percentage of registered cancer patients after duly conducted preventive check-ups over the period of study had fluctuations with the established tendencies of incidence rates, exceeding the value of 50%; the absolute number of persons, in whom oncologic pathology was detected during the preventive check-ups, similarly has been increasing annually (Fig. 1, b).

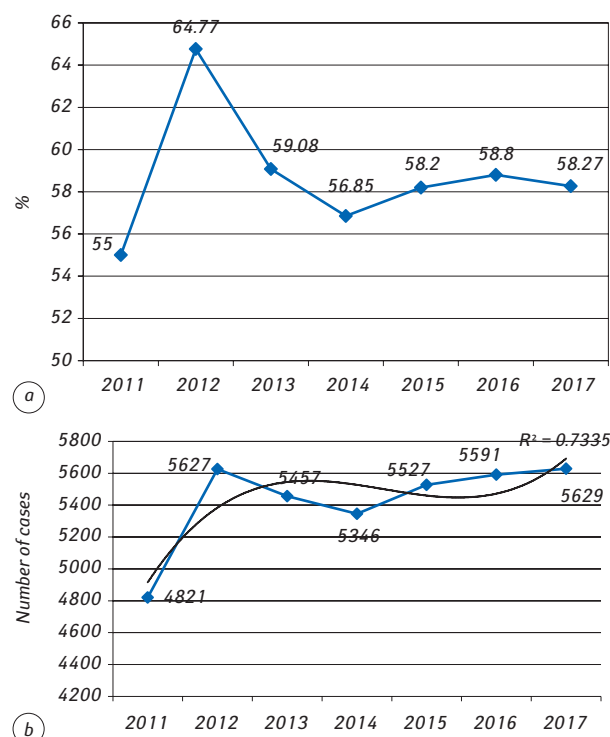


Fig. 1. Year-by-year dynamics of oncologic pathology detected during preventive check-up examination in Kyiv city: a — percentage of cases; b — absolute number of cases

In 2017, the number of registered cancer patients who required follow-up care was the largest, namely: breast cancer (915.8 per 100 thousand people or 14,484 cases); endometrial cancer (444.7 per 100 thousand people or 7,033 cases); prostate cancer (324.0 per 100 thousand people or 4,360 cases); thyroid cancer (231.3 per 100 thousand people or 6,770 cases); cervical cancer (205.0 per 100 thousand people or 3,242 cases); colon cancer (166.1 per 100 thousand people or 4,862 cases); rectal cancer (120.2 per 100 thousand people or 3,517 cases).

Five-year survival rate is an indicator of effectiveness of medical care provided to the patients. Overall, this indicator in Kyiv was increasing slightly from 60.1% in 2011 to 61.59% in 2017 (+2.48%). One-year mortality rate, accounting for 22.73% in Kyiv, was gradually decreasing (from 25.2 in 2011 to 22.73 in 2017, or 9.8%). One-year mortality is particularly high in lung cancer patients (55.0% of cases registered in the previous year); esophageal cancer (53.9%); gastric cancer (46.1%), colon cancer (30.7%) and rectal cancer (25.5%).

Thus, the incidence of cancer (+3.96%, from 357.31 in 2011 to 371.46 per 100 thousand people in 2017) has increased over the period of study among Kyiv city population, with a slight decrease in cancer mortality (from 164.6 to 161.6, or 1.82%). According to the results of 2017, breast cancer (30.3), prostate cancer (22.5) and lung cancer (19.4) are ranked first among the causes of cancer mortality. In terms of morbidity, breast cancer (86.9), prostate cancer (49.4), skin cancer (43.3), endometrial cancer (39.2), colon cancer (28.8 per 100 thousand population) are ranked first.

Rectal cancer (RC) is ranked sixth both in men and women (6.1% in males, 4.9% in females) by its incidence rate over the period of 2011–2017. At the same time, in 2017 by mortality rate (6.3% of men and 6.6% of women), RC occupied the fifth place in men and the fourth place in women. In the age group of 55–74 years, mortality from RC was ranked fourth (6.3%), and in the age group of 75+ it was ranked fifth among men (7.8%) and fourth among women (8.3%).

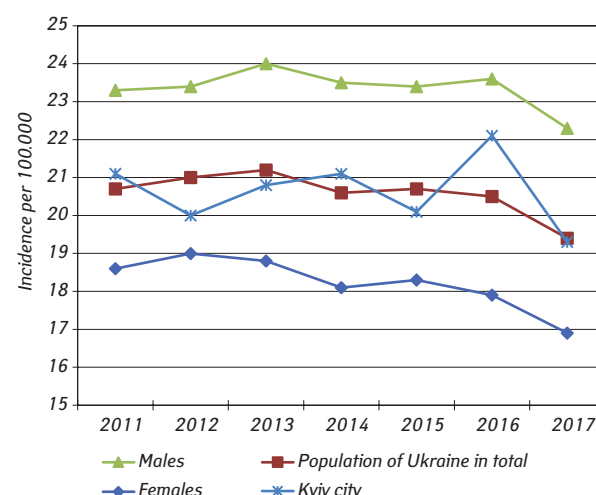


Fig. 2. RC incidence among the population of Ukraine, males, females and residents of Kyiv city (per 100 thousand people, 2011–2017)

In the period of study, the incidence of RC in Ukraine has been gradually decreasing (from 20.7 in 2011 to 19.4 in 2017, or -6.28%), both in men (from 23.3 in 2011 to 22.3 in 2017, or -4.3%) and in women (from 18.6 in 2011 to 16.9 in 2017, or -9.1%) (Fig. 2). More than seven thousand new RC cases are reported annually. According to 2017 data the highest rates of RC were found in Kirovohrad (25.5), Sumy (24.7), Dnipropetrovsk (24.4) regions of Ukraine with the average value of 19.4 per 100 thousand people and the lowest in Ivano-Frankivsk (13.7) and Zakarpatska (14.6) regions. The difference between the extreme values of the index was 1.9-fold ($p < 0.001$).

Reduction in the RC incidence is accompanied with the decreased percentage of its diagnosing during the preventive check-ups (from 20.2 in 2011 to 18.2 in 2017, or -9.9%). This percentage is the highest in Kyiv in 2017 (54.9%), but this trend confirms the need for improved preventive work (Fig. 3).

With the declining percentage of RC detection during preventive check-ups, the percentage of newly diagnosed cases at stage I–II has been decreasing (from 63.6% in 2011 to 56.8 in 2017), with a simultaneous increase in the specific weight of newly diagnosed cases of RC at the late (IV) stage (from 14.9% in 2011 to 17.6% in 2017) (Fig. 4). In 2017, the highest rate of RC detection at stage IV was found in Volynska (25.8%), and Kherson (25.3%) regions, where the lowest numbers of diagnosing during preventive check-ups were found. These data are supplemented with

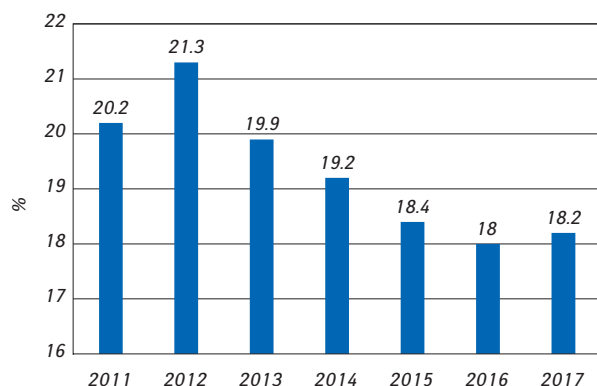


Fig. 3. Dynamics of RC diagnosed during the preventive check-ups (in percent, 2011–2017)

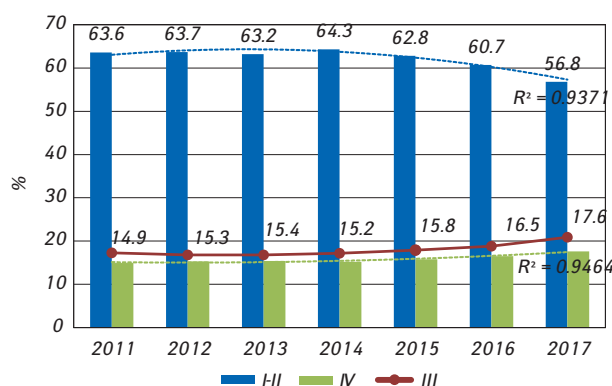


Fig. 4. Dynamics of RC detection at different stages (in percent, 2011–2017)

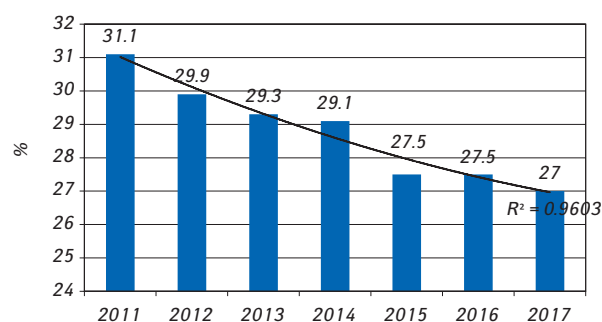


Fig. 5. Dynamics of one-year mortality from rectal cancer (in percent, in 2011–2017)

the one-year mortality rate among RC patients, which decreased from 31.1% in 2011 to 27.0% in 2017 over the period of study (Fig. 5), indicating that every third patient with RC still dies within a year after diagnosis.

The RC mortality rate has been decreasing from 12.3 in 2011 to 11.3 per 100,000 people in 2017, or -8.1% . This index has been actively decreasing in Kyiv (from 12.1 in 2011 to 10.0 in 2017, or -17.36%), with an average of 11.3 in Ukraine and the lowest of 7.3 in Ivano-Frankivsk region. The ratio between the highest and lowest values was 2.1 times ($p < 0.001$).

However, during the period of study, the cohort of RC patients keeps growing (Fig. 6), both in Ukraine (from 99.4 in 2011 to 117.5 in 2017, or $+18.21\%$), and in Kyiv (from 100.2 in 2011 to 121.9 per 100,000 people in 2017, or $+21.7\%$) (Fig. 7).

Among the cohort of RC patients, men slightly prevail (120.1 vs 115.2 cases in women). In Kyiv (2017), the situation is similar — 123.9 cases in males vs 120.3 cases in females per 100,000 people.

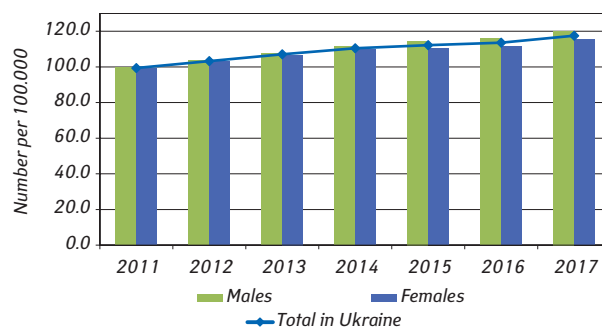


Fig. 6. Prevalence rate of RC in Ukraine per 100 thousand population in 2011–2017

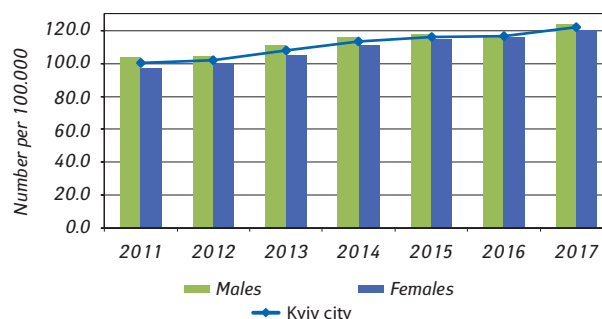


Fig. 7. Prevalence rate of RC in Kyiv per 100 thousand population in 2011–2017

Thus, despite the decrease in morbidity (–6.3%) and mortality (–8.1%), the cohort of RC patients is increasing (+18.2%). At the same time, one-year mortality, the value of which reached 27.0% in 2017, the percentage of RC detection during preventive check-ups, the percentage of diagnosis at the early (I–II) stage of the disease (from 63.6% in 2011 to 56.8% in 2017) has been decreasing, and the percentage of late-stage (IV) disease detection has been rising (from 14.9% in 2011 to 17.6% in 2017). The above proves the expedience of studying the medical and organizational factors that stipulate development of the regional peculiarities of the main statistical indicators related to RC.

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