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COMPARATIVE ASSESSMENT OF THE EFFECTIVENESS OF THE ONCOLOGY SERVICE IN UKRAINE AND CHERNIVTSI REGION

Chornenka Z.¹, Hrytsiuk M.², Domanchuk T.¹, Palibroda N.¹, Navolokina A.²

¹Bukovinian State Medical University, Ukraine

²International European University, Kyiv, Ukraine

ПОРІВНЯЛЬНА ОЦІНКА ЕФЕКТИВНОСТІ ОНКОЛОГІЧНОЇ СЛУЖБИ В УКРАЇНІ ТА ЧЕРНІВЕЦЬКІЙ ОБЛАСТІ

**Чорненко З.¹, Грицюк М.², Доманчук Т.¹, Паліброда Н.¹,
Наволокіна А.²**

¹Буковинський державний медичний університет, Україна

²Міжнародний європейський університет, Київ, Україна

Summary/Резюме

Introduction. In Ukraine, malignant neoplasms together with diseases of the cardiovascular system determine the level of health of the population, as they cause 13.4% of all deaths and 25.0% of disability of the population. Due to mortality from cancer, the country's population loses more than 270,000 man-years of working age every year. And now, in the conditions of military aggression against Ukraine and problems in the economic sphere, the initiated reform of the medical industry requires special attention. Strategy for the development of oncology in Ukraine should be an integral component of the comprehensive national strategy for reforming the health care system.

The aim: To assess the shortcomings in the organization of the oncology service, in particular regarding the early detection and prevention of malignancy of precancerous diseases in gastric cancer.

Materials and methods. A study of performance indicators of oncology health care facilities and a survey of respondents was conducted: 180 respondents of patients with gastric cancer and precancerous diseases of the stomach using medical-statistical, sociological methods and questionnaires.

Results. Disproportions in the organization of specialized oncology care in Ukraine and the Chernivtsi region have been established: a decrease in the absolute number of outpatient facilities over the past five years, an excessive number of inpatient health care facilities, the number of which and the average annual turnover of patients have practically not changed, while the average annual employment beds and the average length of stay of the patient decreased. Despite a slight upward trend, indicators of the completeness of histological verification of the diagnosis (77.2%), coverage by specialists (48.9%), including combined (15.5%) treatment and high patient dissatisfaction with treatment results (H⁹⁰%) and medical care provided (45-80%).

Conclusion. Gastric cancer represents a significant socio-economic burden on the health care system due to the growing need for frequent and long-term inpatient treatment (approximately a quarter of patients with MNG were hospitalized 4 or more times during the year for more than three weeks) with the use of expensive diagnostic methods (CT) and treatment (surgery).

Key words: gastric cancer, oncology service, prevention, oncology health care facilities, oncologists.

Вступ. В Україні злоякісні новоутворення разом із захворюваннями серцево-судинної системи визначають рівень здоров'я населення, оскільки спричиняють 13,4% усіх смертей та 25,0% інвалідності населення. Через смертність від раку населення країни щорічно втрачає понад 270 тис. людино-років працездатного віку. І зараз, в умовах військової агресії проти України та проблем в економічній сфері, особливої уваги потребує розпочата реформа медичної галузі. Стратегія розвитку онкології в Україні має стати невід'ємною складовою комплексної національної стратегії реформування системи охорони здоров'я.

Мета. Оцінити недоліки в організації роботи онкологічної служби, зокрема щодо раннього виявлення та профілактики малігнізації передракових захворювань при раку шлунка.

Матеріали та методи. Проведено дослідження показників діяльності онкологічних закладів охорони здоров'я та опитування респондентів: 180 респондентів хворих на рак шлунка та передракові захворювання шлунка за допомогою медико-статистичних, соціологічних методів та анкетування.

Результати. Встановлено диспропорції в організації спеціалізованої онкологічної допомоги в Україні та Чернівецькій області: зменшення за останні п'ять років абсолютної кількості амбулаторно-поліклінічних закладів, надмірна кількість стаціонарних закладів охорони здоров'я, кількість яких та середньорічний оборот хворих практично не змінився, а середньорічна зайнятість ліжок і середня тривалість перебування хворого зменшилися. Незважаючи на незначну тенденцію до зростання, показники повноти гістологічної верифікації діагнозу (77,2%), охоплення спеціалістами (48,9%), у тому числі комбіноване (15,5%) лікування та висока незадоволеність пацієнтів результатами лікування (90%) та забезпечена медична допомога (45-80%).

Висновок. Рак шлунка є значним соціально-економічним тягарем для системи охорони здоров'я через зростаючу потребу в частому та тривалому стаціонарному лікуванні (приблизно чверть хворих на МНГ госпіталізували 4 і більше разів протягом року на термін більше трьох тижнів) із застосуванням дорогих методів діагностики (КТ) і лікування (операції).

Ключові слова: рак шлунка, онкологічна служба, профілактика, онкологічні заклади охорони здоров'я, онкологи.

Introduction

Over the past fifteen years, there has been deterioration in the indicators of early detection of gastric cancer, which undoubtedly predicts a further increase in neglect rates: detection of pathology in stages III-IV and mortality up to one year from the moment of diagnosis. It is clear that these organizational shortcomings of preventive technologies should be eliminated first of all at the level of primary medical care (PMC), since it is the duties of a PMC doctor to ensure the preventive component through screening, including malignant neoplasms

[1,2].

Prevention of cancer in general and malignant neoplasms of the gastric (MNG) in particular, according to WHO recommendations, should become a priority area of any health care system [3, 4]. At the same time, WHO experts emphasize that the consequences of oncopathology depend not only on the presence of risk factors [5, 6], but also on the population's awareness of them, early detection, timely and appropriate treatment and rehabilitation, that is, on medical and organizational factors [7].

Quite a lot of scientific research has been devoted to the problem of MNG, including malignant neoplasms. Despite their indisputable value, most of them relate only to certain issues of prevention, diagnosis, treatment and rehabilitation of the disease. At the same time, there are still not enough works in which effective medical and organizational technologies for providing a set of measures for primary, secondary and tertiary prevention of malignant neoplasms of the gastric would be worked out from the standpoint of a systemic approach in the modern socio-economic conditions of the transformation of public health and health care systems.

The relevance of our research is also emphasized by the fact that in Ukraine during the years of restoration of independence, three state targeted programs to fight cancer were implemented, which, despite insufficient funding, allowed achieving certain positive results. However, the last of them ended in 2016, and today there is no such program that would ensure the implementation of a system of measures for the prevention of stroke at the state level [8].

A significant burden on the health care system of Ukraine determines the need for medical and social substantiation of directions for improving the organization of the prevention of malignant neoplasms, including and gastric.

Oncological prevention is a complex of state, public, and medical measures that includes primary (preclinical), secondary (specialized clinical), and tertiary (highly specialized anti-relapse) prevention of cancer [4,9,10].

Primary prevention of cancer (PPC) is a system of state-regulated social and hygienic measures and efforts of the population itself, aimed at preventing the occurrence of cancer and precancerous conditions preceding it by eliminating, weakening or neutralizing the influence of adverse factors of the environment and lifestyle, as well as by increasing non-specific resistance organism [10,11].

The strategic goal of the PPC is to reduce the incidence of cancer in the population. The main directions of PPC were formed mainly during the last three decades and today it includes: onco-hygienic prevention, biochemical (chemoprophylaxis), medical-genetic, immune-biological and endocrine-age prevention [12,13]. Ideally, PPR should be carried out in practically healthy people, but it is especially necessary for persons with a high risk of developing malignant neoplasms of the gastrointestinal tract, who have several risk factors or precancerous diseases [6,11].

The strategic aim of secondary cancer prevention (SCP) is to detect the pathology as early as possible. After all, with timely detection, modern methods of treatment allow to significantly extend the patient's life, and in some cases, to defeat the disease. Successes in the development of methods of diagnosis and treatment of early forms of the disease have made it possible to distinguish the so-called "early MNG" (T1N0M0) as a practically curable disease [14,15]. Radical surgical treatment at this stage ensures 10-year survival of 80-95% of patients [16]. In this regard, regular medical examinations and diagnostic studies play an important role, the implementation of which depends both on the responsibility of the citizens themselves for their own health, and on the actions of medical professionals, primarily PMC [7]. An important task of secondary cancer prevention (SCP) is the formation of cancer awareness among medical workers and the population (especially from risk groups) [3], which includes an algorithm of actions aimed at the earliest possible detection of cancer, including stomach, with the slightest, even indirect, suspicion of them - with the use of the most effective methods of objective research [17].

The aim

To assess the shortcomings in the organization of the oncology service, in particular regarding the early detection and prevention of malignancy of precancerous diseases in gastric cancer.

Materials and methods

The performance indicators of oncological health care institutions (on the example of Chernivtsi region) were studied according to the data of the state system for collecting medical statistical information (the National Cancer Register [18] for 2006-2020; "Reports on the network and activity of medical institutions for the year 20__", form No. 47-health and "Reports on patients with malignant neoplasms", form No. 35-health for 2016 and 2021), as well as according to the survey data of the same respondents as at the previous stage study: 130 patients with gastric cancer (main group) and 50 people with precancerous diseases of the gastric (comparison group).

The results

As for the performance indicators of the actual oncology service, their analysis showed that, despite the course for reform-

ing the financing of the health care system determined in 2016 with the aim of optimizing its resources [18] and the related reduction in the number of hospital beds in the country, the oncology the profile was slightly affected, especially at the national level. Thus, during the five years after 2016 (2016-2021), their number in the state decreased by only 229 beds (from 7,909 in 2016 to 7,680 in 2021), which practically did not affect the provision rate population with oncology beds: 1.86 and 1.85 per 10,000 population, respectively (Fig. 1).

A similar indicator in the Chernivtsi region is lower than the national one and decreased from 1.65% to 1.49% during 2016-2021, although in absolute numbers it is only minus 16 beds (from 149 to 133).

In parallel with the decrease in the absolute number of beds, the ratio of the number of beds per 1,000 patients quite naturally increased: in Ukraine from 76.3% in 2016 to 91.0% in 2021, and in Bukovina - from 98.8% to 130.7 %.

At the same time, despite the reduction in the number of oncology hospital beds, their average annual occupancy (Fig. 1) over the considered time period (2016-2021) did not increase, but decreased in Ukraine as a whole (from 349.5 to 253.9 days, i.e. by 27.4%), and much more significantly in the Chernivtsi region (from 378.8 to 163.2 days, -56.9%). Such dynamics, in our opinion, were the result of a change in financing mechanisms from quantitative (per bed day) to qualitative (for packages of medical services) [18], and accordingly, the need for 100% bed occupancy disappeared. On the other hand, this clearly demonstrates the need to further reduce the number of in-patient beds, including due to the fact that a significant pro-

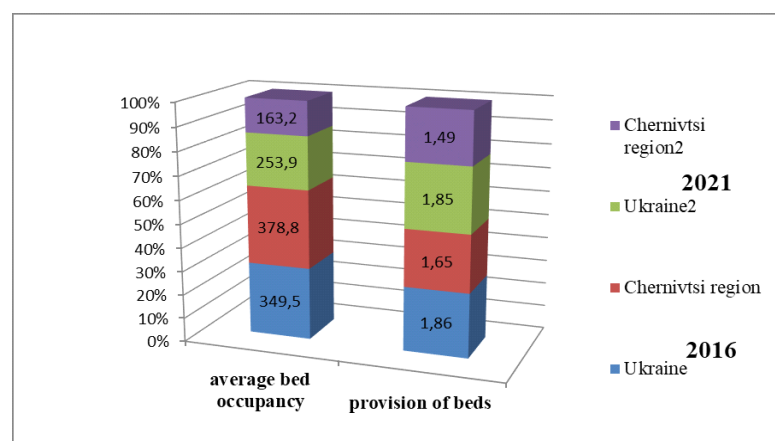


Fig. 1. Dynamics of indicators of population provision of oncology beds and their average annual employment in Ukraine and Chernivtsi region for 2016-2021

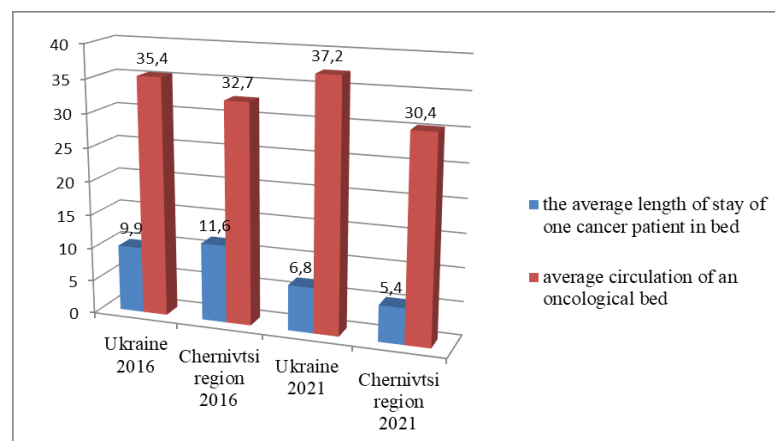


Fig. 2. Dynamics of indicators of the average length of stay of one cancer patient in a bed and the average turnover of an oncology bed in Ukraine and the Chernivtsi region for 2016-2021.

portion of oncology patients can receive part 30.4 patients, respectively). The finding largely explains the already shown decrease in the average annual occupancy of oncology beds, especially accentuated in the Chernivtsi region.

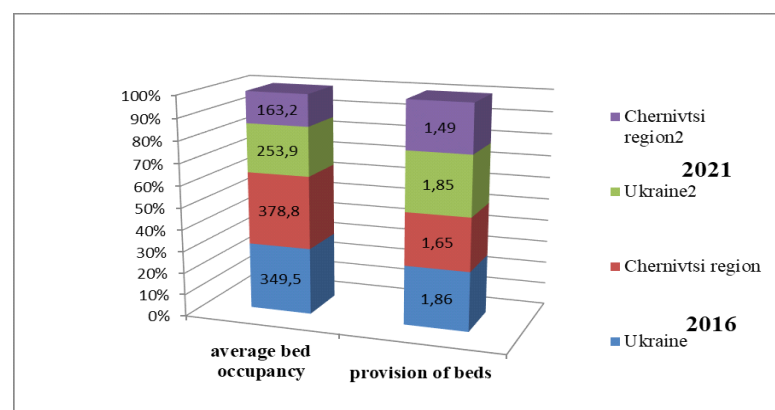


Fig. 1. Dynamics of indicators of population provision of oncology beds and their average annual employment in Ukraine and Chernivtsi region for 2016-2021

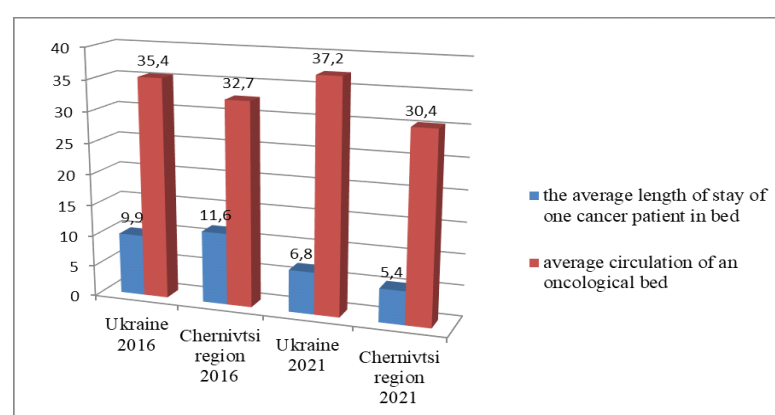


Fig. 2. Dynamics of indicators of the average length of stay of one cancer patient in a bed and the average turnover of an oncology bed in Ukraine and the Chernivtsi region for 2016-2021.

of their treatment in outpatient settings according to modern approaches.

The above is demonstrated by the results of studying the dynamics of indicators of the average length of stay of one cancer patient in bed and the average circulation of an oncological bed (Fig. 2).

As can be seen in Fig. 2, over the past five years, in accordance with modern approaches to the organization of inpatient treatment, the length of treatment for one cancer patient in Ukraine has decreased by 1.5-2 times (from 9.9 days in 2016 to 6.8 days in 2021), as well as in the Chernivtsi region (from 11.6 to 5.4 days, respectively). However, this was not accompanied by a proper increase in the average bed turnover. In Ukraine as a whole, this indicator increased slightly (from 35.4 patients in 2016 to 37.2 patients in 2021), and in the region it even decreased somewhat (from 32.7 to

With regard to the network of health care facilities (HCF) where such beds are deployed, the main providers of medical services for patients with cancer are oncology dispensaries (centers), the number of which decreased from 30 to 27 in 2016-2021. In addition to specialized oncology beds, profile is also present in other communal health care facilities: 5 regional hospitals, 13 city and 9 central district and district hospitals, the number of which did not change during the considered period of time, with the exception of Central District Hospital and District Hospital, which in 2016 had one institution less. Also, three clinics of scientific research institutes and institutions of higher edu-

cation provide medical assistance to patients with chronic diseases, the number of which has increased since 2016 (in 2016, there was only one of them).

In the Chernivtsi region, specialized oncological care is provided by one oncology dispensary per region (today, the Bukovinian Clinical Oncology Dispensary of the Chernivtsi Regional Council). There are no oncology beds in other hospitals.

Thus, the total number of hospitals that provide inpatient oncology care in Ukraine (Fig. 3), despite the indicated reduction in the number of oncology beds, did not change in 2016-2021 (a total of 57 hospitals)

On the other hand, the number of outpatient hospitals with an oncology department or an office decreased: from 585 in 2016 to 482 in 2020. Although in Chernivtsi

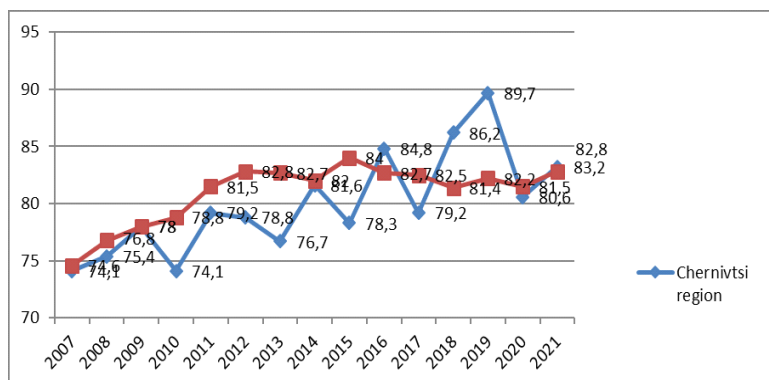


Fig. 5. The dynamics of indicators of the completeness of the morphological verification of the gastric MNG in Ukraine and the Chernivtsi region for 2007-2021

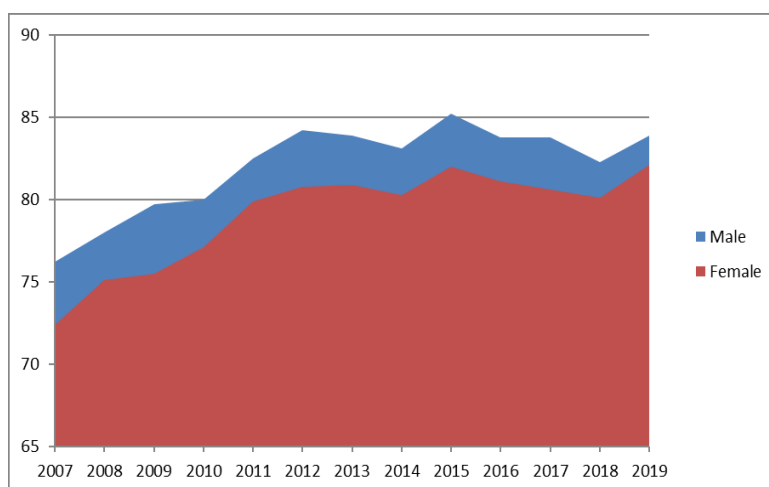


Fig. 6. The dynamics of indicators of the completeness of the morphological verification of gastric cancer among the male and female population of Ukraine in 2007-2020.

region, their number increased by one such institution (16 and 17, respectively).

The supply of oncologists has also practically not changed. Their absolute number for 2016-2021 increased by three doctors in Ukraine as a whole (from 1,666 to 1,669, respectively), while in the Chernivtsi region remained unchanged - 61 oncologists. It is clear that the indicator of their provision remained practically unchanged. However, in Ukraine its value is at the level of 0.39-0.40 oncologists per 10 thousand population, and in Chernivtsi region it is 1.7 times higher - 0.67-0.68‰. Obviously, this was facilitated by the presence of an institution of higher medical education in the region - the Bukovinian State Medical University.

At the same time, the qualitative composition of oncologists has changed somewhat over the years of observation. As can

be seen in Fig. 4, although slightly, the total share of certified among them decreased both in Ukraine as a whole (from 74.7% in 2016 to 71.1% in 2021) and in the region (from 77.0% to 72.1%, respectively). On the other hand, almost half of oncologists have a higher qualification category both in the country (45.3-47.6%) and in Bukovina (47.5%). That is, the decrease in the total number of certified specialists occurred in Ukraine at the expense of oncologists of the first (from 17.9% in 2016 to 13.9% in 2021) and second (from 11.5% to 9.6%) qualification categories, and in the Chernivtsi region – only the second (from 13.1% to 8.2%), since the share of doctors with the first qualification category here remained unchanged (16.4%).

Regarding the indicators of specialized medical care for patients with gastric cancer, according to the data of the National Cancer Registry for 2007-2020 was established that the percentage of patients in whom the diagnosis was verified morphologically (Fig. 5) increased both in the country as a whole (from 74.6% in 2007 to 82.8% in 2021), and in the Chernivtsi region in particular (from 74.15 to 83.2%, respectively).

Differentiation was observed in the completeness of the morphological verification of the diagnosis of MNG according to gender, as in other similar studies [20]. The indicator was more pronounced among the male population of Ukraine (Fig. 6), especially in 2007 (76.2% versus 72.4% among women). At the same time, against the background of gradual growth, their levels in recent years (2016-2021) already differed slightly and amounted to 82.1% and 80.6% in 2021.

Histological verification of the diagno-

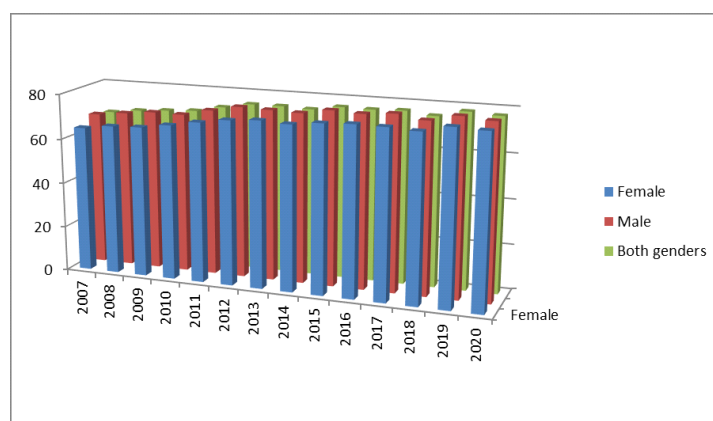


Fig. 7. Dynamics of indicators of the completeness of histological verification of gastric cancer in Ukraine for 2007-2020.

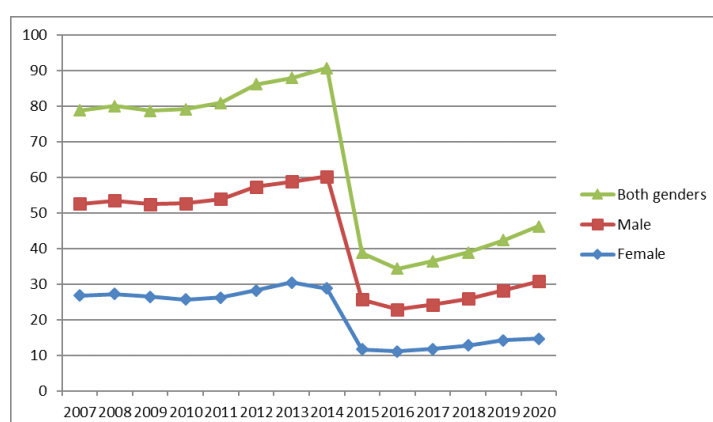


Fig. 8 Dynamics of indicators of the complete coverage of primary patients with gastric cancer in Ukraine by combined treatment (2007-2021)

sis is clearly much more accurate. Its completeness in Ukraine (Fig. 7) was lower than the completeness of morphological verification, but it was characterized by a pronounced upward trend - from 66.9% in 2007 to 77.2-78.1% in 2019-2020 and it was also somewhat higher among men.

In spite of the growing trend, the coverage of patients with ZNS by specialized treatment remained quite low. In Ukraine, the levels of this indicator increased slightly from 42.6% in 2007 to 48.9% in 2021, but still less than half of patients with this pathology received proper treatment, which is obviously related to the high rates of detection of MNG on in late stages, when instead of specialized treatment, only palliative and symptomatic treatment is prescribed.

In the Chernivtsi region, the coverage of specialized treatment was higher than in Ukraine and also increased from 51.1% to

63.0%, respectively, which, against the background of worse indicators of timely detection, in our opinion, indicates the shortcomings of accounting and standardization of the concept of specialized treatment. It should be noted that the coverage of men and women by specialized treatment was practically the same.

The indicators of coverage of primary patients with MNG with combined treatment turned out to be even lower (Fig. 8).

During 2007-2014 coverage of combined treatment of patients with MNG increased slightly from 26.2% to 30.4%, respectively. However, in 2015 the indicator significantly decreased to 13.1%, as the method of its calculation changed (not for all patients, but only for primary ones), demonstrating a slight upward trend in subsequent years, reaching only 15.5% in 2021. In our opinion, such low levels of the considered indicator are a reflection of the already shown usually late detection

of pathology, when full-fledged treatment cannot be applied. On the other hand, poorer coverage of complex treatment among women may indicate its lower availability for financial reasons and requires further in-depth study.

According to the data of the "Reports on patients with malignant neoplasms", form No. 35-health for 2016-2021, it was established that the specific weight of refusals from specialized treatment is quite low and stable. In Ukraine, over the past five years, this indicator fluctuated within 5.0 cases per 100 primary patients in 2016 and 4.5% in 2021. In the Chernivtsi region, such patients were ten times less - 0.5% and 0.4% respectively. A small percentage of primary patients had contraindications to specialized treatment: 2.9-3.1% in the country in general, and 0-0.1% in the studied region in particular.

At the same time, in recent years, the rate of coverage of gastric cancer patients by dispensary (dynamic) observation has increased. The number of those who were registered for the studied pathology in Ukraine increased from 66.2 cases per 100,000 population in 2016 to 70.6% in 2021, which corresponds to the established upward trend of the index of contingents of patients with MNG. In the Chernivtsi region, the coverage of gastric cancer patients by dispensary observation was higher than in the country as a whole, and also increased from 84.0% to 92.1% in 2016-2021.

At the same time, the percentage of those who were under observation for more than 5 years in Ukraine is less than 60% and for 2016-2021 increased very symbolically: from 58.0% to 59.5%. In Chernivtsi region, this indicator was also slightly higher than the national one, and also slightly increased from 68.8% to 69.8%, respectively.

Discussion

Oncology is the branch of medicine that especially affects the indicators of the duration and quality of a person's life. The main problem of the fight against cancer today is the low level of early diagnosis of tumor diseases, which, on the one hand, leads to an increase in the cost of treatment, and on the other hand, it does not allow radical treatment to be carried out and the patient's long-term recovery. Thus, in Ukraine, the share of patients who did not survive one year from the moment of diagnosis is more than 27% today (in the European Union – 16%) . A similar trend is observed with regard to the 5-year survival rate of patients: in Ukraine, this indicator is about 41.4%, in the EU - 59.3%. This is due to the fact that only 47.4% of patients who consult a doctor for the first time have cancer in its early stages. Unfortunately, 20.5% of people already have the IV stage of the disease.

During the years of independence, three state targeted programs aimed at combating cancer in children and adults were implemented in Ukraine - the state program "Oncology" for 2002-2006, the

state program "Children's Oncology" for 2006-2010, the "National Program fight against oncological diseases for the period until 2016"[23,24,25]. In addition, in 2008 the program "50 steps to fight cancer in Ukraine" was developed, and in 2010 the Interstate plan to combat oncological diseases in the CIS countries was adopted. However, all the listed measures, more precisely the funds allocated for the implementation of the listed programs, related only to the purchase of medicines, high-value equipment and consumables. A significant number of tasks related to primary and secondary prevention of malignant neoplasms, screening, early diagnosis, development of scientific research, social, labor and psychological rehabilitation, control of the onco-epidemiological situation remained behind the scenes. As a result, despite quite large amounts of funding, indicators characterizing the effectiveness of the anti-cancer fight for more than 30 years left much to be desired.

Data of organizational legislative and legal documents of the field of "Oncology" currently in force in Ukraine, namely: Order of the Ministry of Health of Ukraine "On the approval of protocols for the provision of medical care in the specialty "oncology"" No. 554 dated September 17, 2007. (edited on June 30, 2015) [26] and the Order of the Ministry of Health of Ukraine "On the system of oncology care for the population of Ukraine" No. 845 dated October 1, 2013 [27], have not been updated for about ten years and do not contain a specific action plan for improving the effectiveness of the oncology service. Another important regulatory document "The National Program for the Fight against Oncological Diseases for the Period Until 2016" [28], which actually contained such an action plan, not only completed the term of its powers, but also did not implement a significant part of them. That is why the "National strategy for the control of oncological diseases until 2030" [29], which was put up for public discussion by publication on the website of the Ministry of Health of Ukraine on January 28, 2021,

with subsequent planned approval by the Cabinet of Ministers of Ukraine, and the European plan to fight Europe's Beating Cancer Plan: implementation roadmap for 2021-2025 Implementation Roadmap [30, 31]). Despite the development of strategic programs to improve the effectiveness of oncology care, increased funding of the health care system in general and oncology in particular, mortality, as well as morbidity, continued to increase and is 388.2 per 100,000 population. At the same time, the population of Ukraine decreased significantly and as of January 1, 2020 was 41,902,400 people, 1,040,137 cancer patients lived in Ukraine.

According to the National Cancer Registry of Ukraine, one year after treatment in the country, 35.3% of all treated patients lose control, after three years - 54.5%, and after five - 60.9% [32]. The experience of the European model of improving the treatment of cancer patients proves that efforts aimed at increasing the coordination between scientific research and improving the treatment of patients are the basis of clinical success. A deep analysis of the European experience in the fight against cancer and its adaptation to the modern realities of the Ukrainian economy will allow in extreme conditions to optimally implement the reform of the medical industry, and in particular its important sector - the oncology service - in the interests of patients with the possibility of equal access to high-quality medical care.

Conclusions

Therefore, significant reserves are needed to optimize inpatient oncology care, since indicators of the security of the population of Ukraine, incl. of Chernivtsi region, institutions and beds for cancer patients, oncologists, as well as the average turnover of patients since the beginning of the active phase of the transformation of the health care system (since 2016) remained practically constant against the background of a significant decrease in the average occupancy of beds in the year (in Ukraine for 2016-2021 by 27.4%, in the region - 56.9%), the average length of stay of one patient in

bed (by 1.5-2 times) and a decrease in the absolute number of outpatient oncology care facilities.

It was revealed that over the past fifteen years (2007-2021), the specific weight of patients with gastric cancer (more among men) whose diagnosis was verified morphologically increased (up to 82.8% in 2021 in Ukraine in general), in that while, despite a slight upward trend, coverage of patients by histological verification remained insufficient (77.2%).

It has been shown that patients with MNG are insufficiently covered by specialized treatment (48.9%), including combined treatment (15.5%), despite the fact that the frequency of refusals from treatment is less than 5%.

It was found that the completeness of coverage of patients with gastric cancer by dispensary observation for 2016-2021 increased both in Ukraine (up to 84.0%) and in the Chernivtsi region (92.1%), but the specific weight of those who was registered for more than five years, although it also increased somewhat, it remained significantly lower (59.5% and 69.8%, respectively).

References

1. Matyuha LF, Lishchyshyn OM, Babinets LS, Batsyura GV, Blazhievsky MV, Bukhanovska TM, etc. Screening in primary care. Evidence-based clinical practice. Kyiv: Ministry of Health of Ukraine; 2018. 464 p. Screening at PMC, 2018
2. Ministry of Health of Ukraine. On the approval of the Procedure for providing primary medical aid. Order of the Ministry of Health of Ukraine dated March 19, 2018 No. 504 [Internet]. Kyiv: Ministry of Health of Ukraine; 2018[cited 2022 Mar 03]. Available at: <https://zakon.rada.gov.ua/laws/show/z0348-18#Text>
3. Skrypnikova OS, Yurochko TP. Early detection and screening as the main components of the cancer prevention strategy. Вісник соціальної гігієни та організації охорони здоров'я України. 2019;2:23-32. doi: 10.11603/1681-2786.2019.2.10476
4. World Health Organization. Cancer prevention and control in the context of an integrated approach. Seventh world health assembly. Agenda item 15.6. WHA70.12, 31 May 2017. Access mode: https://apps.who.int/gb/ebwha/pdf_files/WHA70/A70_R12-en.pdf.

5. Poorolajal J, Moradi L, Mohammadi Y, Cheraghi Z, Gohari-Ensaf F. Risk factors for stomach cancer: a systematic review and meta-analysis. *Epidemiol Health* [Internet]. 2020[cited 2022Jan05];42:e2020004. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7056944/pdf/epih-42-e2020004.pdf> doi: 10.4178/epih.e2020004
6. Yusefi AR, Lankarani KB, Bastani P, Radinmanesh M, Kavosi Z. Risk Factors for Gastric Cancer: A Systematic Review. *Asian Pac J Cancer Prev*. 2018;19(3):591-603. doi: 10.22034/APJCP.2018.19.3.591
7. Yoshida N, Doyama H, Yano T, Horimatsu T, Uedo N, Yamamoto Y, et al. Early gastric cancer detection in high-risk patients: a multicentre randomised controlled trial on the effect of second-generation narrow band imaging. *Gut*. 2021;70(1):67-75. doi: 10.1136/gutjnl-2019-319631
8. Про рекомендації парламентських слухань на тему: "Організація протиракової боротьби в Україні. Проблеми та шляхи їх вирішення". Постанова ВР України від 2 вересня 2020 року № 862-IX [Інтернет]. 2020 [цитовано 2022 Сер 14]. Доступно на: <https://zakon.rada.gov.ua/laws/show/862-IX#Text>.
9. Sitarz R, Skierucha M, Mielko J, Offerhaus GJA, Maciejewski R, Polkowski WP. Gastric cancer: epidemiology, prevention, classification, and treatment. *Cancer Manag Res*. 2018;10:239-48. doi: 10.2147/CMAR.S149619
10. Gasenko E, Leja M, Polaka I, Hegmane A, Murillo R, Bordin D, et al. How do international gastric cancer prevention guidelines influence clinical practice globally? *Eur J Cancer Prev*. 2020;29(5):400-7. doi: 10.1097/cej.0000000000000580
11. Yang L, Ying X, Liu S, Lyu G, Xu Z, Zhang X, et al. Gastric cancer: Epidemiology, risk factors and prevention strategies. *Chin J Cancer Res*. 2020;32(6):695-704. doi: 10.21147/j.issn.1000-9604.2020.06.03
12. Waldum HL, Sagatun L, Mjones P. Gastrin and Gastric Cancer. *Front Endocrinol (Lausanne)* [Internet]. 2017[cited 2020Feb 21];8:1. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5239792/pdf/fendo-08-00001.pdf> doi: 10.3389/fendo.2017.00001
13. Lyons K, Le LC, Pham YTH, Borron C, Park JY, Tran CTD, et al. Gastric cancer: epidemiology, biology, and prevention: a mini review. *Eur J Cancer Prev*. 2019;28(5):397-412. doi: 10.1097/cej.0000000000000480
14. Nagtegaal ID, Odze RD, Klimstra D, Paradis V, Rugge M, Schirmacher P, et al. The 2019 WHO classification of tumours of the digestive system. *Histopathology*. 2020;76(2):182-8. doi: 10.1111/his.13975
15. Serra O, Galón M, Ginesta MM, Calvo M, Sala N, Salazar R. Comparison and applicability of molecular classifications for gastric cancer. *Cancer Treat Rev*. 2019;77:29-34. doi: 10.1016/j.ctrv.2019.05.005
16. Lee KE, Lim KH. Differences in Factors Affecting the Quality of Life Over Time After the Gastrectomy in Patients With Stage I Gastric Cancer. *Gastroenterol Nurs*. 2020;43(3):241-8. doi: 10.1097/SGA.0000000000000416
17. Lazirskiy VA, Farzullayev NN. The role of the instrumental examinations in diagnostics and staging of locally distributed stomach cancer. *Харківська хірургічна школа*. 2022;1:42-6. doi: 10.37699/2308-7005.1.2022.07
18. Kolesnik OO, editor. Cancer in Ukraine, 2019–2020. Morbidity, mortality, performance indicators of the oncology service. *Bulletin of the Numerical Cancer Registry No. 22* [Internet]. Kyiv; 2021[cited 2021 Aug 29]. Available at: http://www.ncru.inf.ua/publications/BULL_22/index.htm
19. Verkhovna Rada of Ukraine. About state financial guarantees of medical care of the population [Internet]. 2018. [cited 2023 Jan. 15]. Law No. 2168-VIII. Editorial office, January 2022. 01. Available at: <https://zakon.rada.gov.ua/laws/show/2168-19#Text>
20. Romanov MP. Medical-statistical assessment of the sex-age structure of morbidity and mortality from oncological diseases in Ukraine. *Herald of scientific research*. 2017;1:85-90. doi: 10.11603/2415-8798.2017.1.7594 84
21. Tsimberidou AM, Said R, Staudt LM, Conley BA, Takebe N. Defining, Identifying, and Understanding "Exceptional Responders" in Oncology Using the Tools of Precision Medicine. *Cancer J*. 2019 Jul/Aug;25(4):296-299. doi: 10.1097/PPO.0000000000000392. PMID: 31335394.
22. World Health Organization. Assessing national capacity for the prevention and control of noncommunicable diseases: report of the 2021 global survey. Geneva: World Health Organization; 2024, 136 p. Access mode: <https://www.who.int/about/office-of-internal-over-sight-services>
23. About the approval of the State Program "Oncology" for 2002-2006 by Resolution of the Cabinet of Ministers of Ukraine of March 29, 2002 N 392. (Про затвердження Державної програми "Онкологія" на 2002-2006 роки затверджена постановою Кабінету Міністрів України від 29 березня 2002 року N 392). URL: <https://zakon.rada.gov.ua/laws/show/392-2002-%D0%BF#Text>
24. About the approval of the State Program "Children's Oncology" for 2006-2010, approved by the resolution of the Cabinet of Ministers of

- Ukraine dated July 19, 2006. No. 983 (Про затвердження Державної програми “Дитяча онкологія” на 2006-2010 роки затверджена постановою Кабінету Міністрів України від 19 липня 2006 р. N 983). URL: <https://zakon.rada.gov.ua/laws/show/983-2006-%D0%BF#Text>
25. About the approval of the National program for the fight against oncological diseases for the period until 2016. Law of Ukraine dated December 23, 2009 N 1794-VI (Про затвердження Загальнодержавної програми боротьби з онкологічними захворюваннями на період до 2016 року. Закон України від 23 грудня 2009 року N 1794-VI). URL: <https://zakon.rada.gov.ua/laws/show/1794-17#Text>
26. On the approval of protocols for the provision of medical care in the specialty “oncology”. Order of the Ministry of Health of Ukraine No. 554 dated September 17, 2007 (edition dated June 30, 2015) (Про затвердження протоколів надання медичної допомоги за спеціальністю “онкологія”. Наказ МОЗ України № 554 від 17.09.2007 (редакція від 30.06.2015) URL: <https://zakon.rada.gov.ua/rada/show/v0554282-07#Text>
27. About the system of oncology care for the population of Ukraine. Order of the Ministry of Health of Ukraine No. 845 dated October 1, 2013. (Про систему онкологічної допомоги населенню України. Наказ МОЗ України № 845 від 01.10.2013). URL: <https://zakon.rada.gov.ua/laws/show/z0077-14#Text>
28. On the approval of the National Program for the fight against oncological diseases for the period up to 2016. Law of Ukraine No. 1794-VI dated December 23, 2009. (Про затвердження Загальнодержавної програми боротьби з онкологічними захворюваннями на період до 2016 року. Закон України № 1794-VI від 23 грудня 2009 року). URL: <https://zakon.rada.gov.ua/laws/show/1794-17#Text>
29. National cancer control strategy until 2030. Draft Resolution of the Cabinet of Ministers of Ukraine dated January 28, 2021. (Національна стратегія контролю онкологічних захворювань до 2030 року. Проект Постанови Кабінету Міністрів України від 28.01.2021 року). URL: <https://moz.gov.ua/article/publicdiscussions-archive/proekt-postanovi-kabinetu-ministriv-ukraini-pro-zatverdzhennja-nacionalnoi-strategiikontrolju-onkologichnih-zahvorjuvan-do-2030-roku>
30. Europe’s Beating Cancer Plan. Communication from the commission to the European parliament and the council empty. Brussels, 3.2.2021. URL: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2021%3A44%3AFIN>
31. Europe’s Beating Cancer Plan: Implementation Roadmap. Health and Food Safety Directorate General. 2021. URL: <https://ec.europa.eu/newsroom/sante/newsletter-archives/35593>
32. Fedorenko Zoja P., Goulak Lyudmyla O., Gorokh Yevgeniy L., Ryzhov Anton Yu., Soumkina Olena V. National Cancer Institute of Ukraine . National Cancer Registry of Ukraine. BULLETIN OF THE NATIONAL CANCER REGISTRY OF UKRAINE № 25. Kyiv; 2024. URL: http://www.ncru.inf.ua/publications/BULL_25/index_e.htm

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