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The effectiveness of regular medical check-up for ovarian cancer patients

D.N. Maystrenko¹, A.G. Manikhas¹, A.E. Chernobrovkina^{1*},
B.L. Tsivyan², D.V. Gladyshev²

¹Russian Scientific Center for Radiology and Surgical Technologies named
after Academician A.M. Granov, St. Petersburg, Russia;

²City Hospital No. 40 of Kurortny District, St. Petersburg, Russia

Abstract

Background. With the widespread prevalence of oncogynecological diseases, measures for their early detection and timely treatment, including the systematic implementation of all necessary medical and diagnostic measures within the framework of regular medical check-up, become more important.

Aim. Evaluation of the effectiveness of regular medical check-up of patients with ovarian cancer.

Material and methods. Information was collected by copying data from the primary medical documentation of patients with ovarian cancer who were under regular medical check-up in 2020 in all 4 outpatient cancer care centers in St. Petersburg (392 observation units, complete study). The average age of the patients was 59.7±3.8 years. The data were statistically processed, extensive coefficients and average values with standard deviation (δ) were calculated. The initial data had a normal distribution. The effectiveness of regular medical check-up and the achievement of its completeness was assessed by comparing the actual volumes of medical care provided to patients as part of regular medical check-up with the volumes of medical care established by the Standard of Medical Care for Adults with Ovarian cancer, Fallopian Tube Cancer and primary peritoneal cancer, approved by Order of the Ministry of Health of the Russian Federation dated April 13, 2021, as well as by assessing the compliance of the actual terms of medical care with the terms established by the program of state guarantees.

Results. Non-compliance with the timing of the regular medical check-up start from the moment of establishing diagnosis was revealed, as well as limited compliance with the requirements of the industry standard for the frequency and multiplicity of therapeutic and diagnostic procedures: the three-time visit to the oncologist established by the standard was performed only in 45.5%, the determination of the level of the CA125 adenogenic cancer antigen in blood — in 68.8%, ultrasound examination of the abdominal organs — in 36.6%, of the true pelvis — in 82.2%, magnetic resonance imaging of the true pelvis — in 36.6% of cases.

Conclusion. Evaluation of compliance with the completeness of regular medical check-up of patients with ovarian cancer showed a discrepancy between the volume of its performance to the industry standard and other regulatory documents in the field of healthcare, which indicates the failure to achieve its effectiveness and the unsatisfactory quality of medical care for patients in this group.

Keywords: regular medical check-up, prevention of malignant neoplasms, ovarian cancer, quality and accessibility of medical care.

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Background

At the current stage of development of health care in the Russian Federation, there is a need to improve the provision of medical care in oncological pathology among specialists in this field and healthcare organizers [1, 2]. This is due to the wide prevalence of diseases in this group, as well as severe medical and social losses that occur in cases

of their unfavorable course [3, 4]. In this regard, medical and organizational measures for the early detection of oncological diseases, as well as the prevention of their complications in cases of an established diagnosis, are of particular importance [5].

The need to take urgent measures to prevent cancer is stated in the “Forecast of the Long-Term Socio-Economic Development of the Russian Fe-

*For correspondence: sekretar_spb@mail.ru

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deration for the period up to 2030” formulated by the Ministry of Economic Development of the Russian Federation [6], as well as in the Decree of the President of the Russian Federation dated 05/07/2018 No. 204 “On the national goals and strategic objectives of the development of the Russian Federation for the period up to 2024,” under which the federal project “Cancer control” is being implemented as part of the national project “Healthcare” [7].

Taking into account the above circumstances, forms and methods of preventive work with patients with cancer are currently being actively developed. These include the improvement of technologies for oncological screening and a comprehensive assessment of patients’ health status, as well as approaches to the active identification of oncological cases by widespread information of the population, including the participation of medical insurance organizations that implement compulsory health insurance, on enforcement of the right to undergo preventive examinations [8–10].

Special attention should be paid to the organization of preventive medical care for patients with malignant neoplasms of the female genital organs, since the loss of health in the event of these diseases creates not only the risk of irreparable human losses but also, if the patient’s life is saved, a threat to her reproductive functions [4]. At all stages of providing medical care to patients in this group, it is extremely important to adhere to the principles of its preventive orientation, to prevent the development of complications and adverse outcomes. From this point of view, tertiary prevention of malignant neoplasms in gynecology within regular medical check-ups of patients requires the systematic implementation of all indicated medical and diagnostic measures and the prevention of untimely provision of medical care or its unskilled conduct, which could cause deterioration of the patient’s condition or the development of a more serious one [11].

The control over the completeness of regular medical check-ups of patients with malignant neoplasms, including those in the female genital system, established under the current legislation, mainly involves selective examinations performed within departmental, internal, and non-departmental quality control of the medical care provided to patients [12, 13]. Simultaneously, methods of monitoring the quality and availability of medical care are being introduced into healthcare practice more and more actively, which, associated with actively informing patients about the need to perform medical and diagnostic procedures, enable the achievement of effective results of the coverage of profile patients with preventive measures [14, 15]

and the analysis of the quality of medical care provided over time.

This article is focused on assessing the effectiveness of the availability and quality of regular medical check-ups of patients with malignant neoplasms of the ovary in terms of the completeness and timeliness of provision of appropriate medical care.

Aim

The study aimed to evaluate the effectiveness of regular medical check-ups in patients with ovarian cancer.

Materials and methods

To assess the effectiveness of regular medical check-ups in female patients with ovarian cancer, data were copied from the primary medical documentation (form No. 025/u “Medical record of a patient receiving medical care on an outpatient basis”) to the developed data collection form. Data collection was performed in 2020 in all four outpatient cancer care centers operating in St. Petersburg at the time of the study, where 1420 patients with malignant neoplasms of the female genital organs were under regular medical monitoring, including 392 patients who were registered with ovarian cancer. A patient with ovarian cancer who received medical care at a regular medical check-up was taken as the survey unit.

The average age of patients under regular medical check-ups for ovarian cancer was 59.7 ± 3.8 years. Most of the women were socially active; at the time of the study, 53.3% of them were employed, and the rest of them were unemployed, including due to retirement age (14.5%), disability (22.2%), and other reasons (10.0%).

The data obtained were statistically processed; the extensive coefficients and average values with mean-square deviation (δ) were calculated. A significance level of 68.3% ($M \pm 1\delta$) was used to describe the confidence interval. The original data had a normal distribution.

The most important indicator of the effectiveness of medical care is its compliance with quality standards. In accordance with the requirements of the Federal Law of the Russian Federation dated November 21, 2011 No. 323-FZ “On the Fundamentals of Protecting the Health of Citizens in the Russian Federation” [16], the quality of medical care is a set of characteristics that reflect the timeliness of medical care; the correct choice of methods of prevention, diagnostics, treatment, and rehabilitation in the provision of medical care; and the degree of achievement of the planned result. At the same time, the availability and quality of medical care are ensured, among other things, by compli-

ance with the standards of medical care, as well as compliance with the guaranteed scopes of its provision in the provision of medical care, established by the state program, which guarantees the free provision of medical care to its citizens.

Taking into account the above circumstances, the effectiveness of regular medical check-ups in patients with ovarian cancer within this study was assessed by comparing the actual scopes of medical care provided to patients at regular medical check-ups with the scopes of medical care established by the Standard of Care for Adults with Ovarian Cancer, Fallopian Tube Cancer, and Primary Peritoneal Cancer (regular medical check-up), approved by order of the Ministry of Health of the Russian Federation dated April 13, 2021 No. 336n [17], as well as by assessing the compliance of the actual terms of medical care with the terms established by the program of state guarantees [18].

Results

Patients with ovarian cancer accounted for 27.6% of all patients attending regular medical check-ups at outpatient cancer care centers in St. Petersburg in 2020 for malignant neoplasms of the female genital system. Medical and diagnostic measures within the regular medical check-ups of oncological diseases require a multifactorial approach and is conditioned, among other things, by the diagnosed stage of development of the pathological process and the disease duration. It has been established that most of the patients with malignant neoplasms of the ovary who were attending regular medical check-ups by an oncologist were patients with stage III disease (42.2%). At the same time, 57.8% of patients were registered in the early stages of the disease, including 24.1% of women with stage I of the oncological process and 33.7% of women with established stage II disease. The average duration of regular medical check-ups of patients was 4.7 ± 0.7 years.

The patients' anamnestic data established that in 82.5% of cases, the disease was suspected during preventive examinations, when women had minimal complaints about their health. Initially, patients with ovarian cancer that was confirmed later, in most cases (63.3%) were referred for a consultation with an oncologist by an obstetrician-gynecologist of the maternity welfare clinic. The remaining 36.7% of patients applied either independently or were referred by a primary care physician (general practitioner), which indicates an irregular visit by patients to an obstetrician-gynecologist, including within regular medical examinations and other preventive examinations, which creates conditions for belated diagnostics of malignant neoplasms in women.

The detection of an oncological disease is the basis for the immediate registration of the patient for regular medical check-ups, including for the purpose of determining the indications and terms of the provision of appropriate specialized medical care. The regulatory requirements established by the Program of State Guarantees of Free Medical Care to Citizens for 2020 and for the scheduled period of 2021 and 2022, approved by Decree of the Government of the Russian Federation No. 1610 of December 7, 2019 [18], the start of regular medical check-ups from the moment of establishment of an oncological diagnosis should not exceed three working days. The data obtained established that, in accordance with the specified standards, within a period not exceeding 3 working days, regular medical check-ups were started in only 18.2% of cases. In general, in 68.5% of patients, regular medical check-ups were started within a period not exceeding 1 month, and in 31.5% of women, regular medical check-ups were started after more than 1 month.

Assessment of the compliance of the actual scope of treatment and diagnostic measures performed for patients with ovarian cancer within the regular medical check-up with their scope established for patients in this group by the Standard of Medical Care for Adults with Ovarian Cancer, Fallopian Tube Cancer, and Primary Peritoneal Cancer (regular medical check-up), approved by order of the Ministry Health of the Russian Federation dated April 13, 2021 No. 336n (hereinafter referred to as the Standard) [17], showed the following.

In accordance with the Standard, all patients with ovarian cancer must visit an oncologist three times per year for a regular medical check-up; however, in fact, only 45.5% of patients visited a doctor with the indicated frequency.

The most important mandatory studies performed to control the prevention of complications of a malignant neoplasm of the ovary (tertiary prevention) should include a determination of the level of the CA125 adenogenic cancer antigen in the blood, which, in accordance with the Standard, is also monitored at least three times a year in each patient. This part of the Standard requirements is fulfilled in full in 68.8% of women under regular medical check-ups with ovarian cancer.

The Standard requirements also determined that three times a year, during regular medical check-ups, all patients should undergo a complex of radiation diagnostic studies, which allow visualization of the initial forms of an adverse development of the pathological process. This is an ultrasound examination of the abdominal cavity and small pelvis. In addition, according to the indications, magnetic

Table 1. Correspondence of the scope of medical care for ovarian cancer, established by the standard of case follow-up for malignant neoplasms of the female genital organs, and its actual implementation

Treatment and diagnostic measure	Standard (coverage of dispensary patients/frequency rate annually)	Actual coverage of dispensary patients (share/number)
Appointment with an oncologist	100%/3 times	45.5%/178
Level of antigen of adenogenic cancers CA125 in the blood	100%/3 times	68.8%/270
US of the abdominal organs	100%/3 times	36.7%/144
US of the pelvic organs	100%/3 times	82.4%/323
MRI of the pelvic organs	6%/3 times	2.8%/11
MRI of the abdominal organs	6%/3 times	2.6%/10
CT of the pelvic organs	10%/3 times	3.6%/14

Note: US, ultrasound examination; MRI, magnetic resonance imaging; CT, computed tomography.

resonance imaging of the pelvic organs and the abdominal cavity can be performed on patients. The standard establishes that these studies should cover at least 6% of patients who should be examined using this method three times during the year. It is also stipulated that at least 10% of patients should undergo computed tomography of the pelvic organs three times during the year.

In fact, in full compliance with the Standard, an ultrasound examination of the abdominal organs was performed three times during the year in only 36.7% of patients, and an ultrasound examination of the pelvic organs was performed in 82.4% of patients. Despite the established requirements, magnetic resonance imaging of the pelvic organs was performed in only 11 patients included in our study, that is, in total, with the established regularity and frequency, such an examination was performed only in 2.8% of cases (44.4% of all cases in which it must be performed in accordance with the Standard). Magnetic resonance imaging of the abdominal organs was performed with the proper frequency and regularity in only 2.6% of our cases (a total of ten patients, which corresponds to 42.2% of all patients subject to this study in accordance with the Standard). Computed tomography of the pelvic organs was performed in only 3.6% of cases (14 patients, which corresponds to 36.6% of the patients subject to this study in accordance with the Standard requirements) (Table 1).

The study conducted revealed that, in addition to the diagnostic procedures provided by the Standard, other clarifying studies are performed in accordance with the indications for patients who are under regular medical monitoring for a malignant neoplasm of the ovary. Collection of anamnestic data, physical examination, control of the main clinical and biochemical parameters of blood and urine, and a coagulogram study were performed

in all studied cases of regular medical check-ups. X-ray examination of the chest organs was performed in 52.1% of cases, positron emission tomography was performed in 6.3% of cases, and other methods of radiation diagnostics were used in 24.4% of cases.

To control carcinogenic risks, patients in almost every third case of regular medical check-ups (31.5%) are examined for carriage of the human papillomavirus, and with a frequency of 36.8 per 100 patients, diagnostic curettage of the mucous membrane of the cervical canal and uterine cavity is performed.

Conducting diagnostic studies in the indicated significant scopes indicates the feasibility of obtaining their results by the doctor to adjust, in a timely manner, the further treatment of patients, including the assessment of indications for their referral to subsequent stages of treatment. Later, considering expert data on the required regularity and frequency of these studies, they can be included in the Standard for the provision of medical care to patients in this group.

The study established that in the case of an adverse course of the disease identified during a regular medical check-up, patients are referred in the prescribed manner for specialized medical care, mainly in a hospital and a day patient facility (for chemotherapy). Such treatment is received by 42.7% of patients attending regular medical check-ups during the year. Taking into account the fact that only 45.5% of patients with ovarian cancer regularly visit an oncologist for preventive purposes as part of their regular medical check-up (Table 1), the data obtained on a significant proportion of patients who are referred for specialized medical care, and therefore need it, confirm the need to involve actively all patients in regular medical check-ups in order to prevent their untimely referral to the sub-

sequent stages of medical care, the late start of specific therapy, and surgical interventions.

Discussion

An analysis of the organization of regular medical check-ups of patients with ovarian cancer, performed for the timely control of pathological process development and the prevention of adverse complications (tertiary prevention), enabled identification of its significant defects.

Despite the medical indications and the requirements of the current procedure for providing medical care to the population in case of oncological diseases [19, 20], only 73.5% of all patients subject to monitoring by an oncologist were registered for regular medical check-ups. In other cases, there was no information about the regular case follow-up of such patients, which is an unfavorable factor in relation to the timely monitoring of their health status.

The identified cases of untimely registration of patients with an already established diagnosis for regular medical check-ups deserve a reproach because this does not comply with the norms of the current legislation in the field of healthcare [17, 19]. The predominance among the dispensary group of patients with early (I–II) disease stages (57.8%), as well as the duration of their case follow-up as a whole, indicates that primary health care specialists adhere to the principles of oncological alertness aimed at the timely detection of malignant neoplasms. However, the fact that more than a third (36.7%) of women applied to an oncologist independently indicates the need to continue the activities aimed at the preventive foundations of anticancer control.

Medical care provided as part of a regular medical check-up must meet the requirements for quality and accessibility. The study showed incomplete compliance with the Standard of Medical Care during regular medical check-ups of patients with ovarian cancer in most cases (Table 1), as well as inconsistency, in some cases, in the timing of its implementation.

Evaluation of the achievement of preventive examinations within the framework of regular medical check-ups, performed from the standpoint of legislation in the field of health care, showed that the proper quality level of medical care provided to the patients in the studied group was not achieved, namely the deadlines for its provision in terms of registering patients for regular medical check-ups were not observed, and the medical services established by the Standard for the provision of medical care for this disease were not fully performed.

The revealed defects in regular medical monitoring of patients with ovarian cancer require further in-depth study, including an assessment of the impact of the identified drawbacks on long-term consequences, the achievement of the goals of preventive work with patients with cancer, and the timeliness of preventing the development of complications and progression of the disease stage.

It should be noted that in the context of the implementation in St. Petersburg of measures to control the spread of COVID-19, within which regular medical check-ups for patients, including patients with cancer, was not suspended [21], the actual coverage with regular medical check-ups of all groups decreased. According to departmental reporting in the field of compulsory medical insurance during the information support of citizens at all stages of provision with medical care “Information on regular medical check-up of the adult population” [8], in St. Petersburg in 2019, 54.1% of patients attending regular medical check-ups received appropriate medical care, and in 2020, regular medical check-up coverage was only 36.6%. The decrease in regular medical check-up coverage of patients in all groups, including those with oncological diseases, is an additional indicator of problems in the organization of regular medical check-ups and requires special control during anti-epidemic measures.

Conclusions

1. In 36.7% of cases, when registered for regular medical check-ups, patients with ovarian cancer independently applied to an oncologist and were not referred by specialized professionals, which indicates that they did not take preventive measures (medical check-up, preventive examination), including examination by an obstetrician-gynecologist; therefore, the diagnosis was established in the later stages of the disease.

2. The statutory timing for registration for regular medical check-ups in patients with ovarian cancer is observed only in 18.2% of cases, which should be considered a negative indicator of compliance with the principles of the quality of this medical care.

3. Noncompliance with the requirements of the industry standard for the provision of medical care [17] to patients with ovarian cancer was revealed, namely noncompliance with the regularity and frequency of visits to an oncologist (performed in only 45.5% of cases), marker tests of antigens in the blood (performed in only 68.8%), a complex of radiation diagnostic studies (ultrasound examination of the abdominal organs is performed only in 36.6%, and that of the small pelvis is performed in 82.2% of cases; magnetic resonance imaging of

the small pelvis is performed in 2.8%, and that of the abdominal cavity is performed only in 2.6% of cases).

4. The identified discrepancy between the actual scope of medical care provided to patients with ovarian cancer, the regularity and frequency of medical services provided to the standards established for patients in this group by the Standard [17], as well as noncompliance with the terms of their provision to the legislation in the field of healthcare as a whole, indicates the lack of effectiveness of regular medical check-ups. This should become the basis for measures to improve the quality control of medical care provided to these patients.

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Author details

Dmitry N. Maystrenko, M.D., D.Sci. (Med.), Director, Federal State Budgetary Institution “Russian Scientific Center for Radiology and Surgical Technologies named after Academician A.M. Granov” of the Ministry of Health of the Russian Federation; info@rrcrst.ru; ORCID: <http://orcid.org/0000-0001-8174-7461>

Alexey G. Manikhas, M.D., D.Sci. (Med.), Prof., Head, Depart. of Radiology, Surgery and Oncology, Federal State Budgetary Institution “Russian Scientific Center for Radiology and Surgical Technologies named after Academician A.M. Granov” of the Ministry of Health of the Russian Federation; edu@rrcrst.ru; ORCID: <http://orcid.org/0000-0001-9616-6635>

Alla E. Chernobrovkina, M.D., Cand.Sci. (Med.), Assoc. Prof., Depart. of Radiology, Surgery and Oncology, Federal State Budgetary Institution “Russian Scientific Center for Radiology and Surgical Technologies named after Academician A.M. Granov” of the Ministry of Health of the Russian Federation; sekretar_spb@mail.ru; ORCID: <http://orcid.org/0000-0001-5928-9791>

Boris L. Tsivyan, M.D., D.Sci. (Med.), Prof., Depart. of Obstetrics and Gynecology named after S.N. Davydov, I.I. Mechnikov NWSMU of the Ministry of Health of Russia; btsivyan@mail.ru; ORCID: <http://orcid.org/0000-0002-7132-7487>

Dmitry V. Gladyshev, M.D., Deputy Chief Physician for Surgery, St. Petersburg State Medical Institution “City Hospital No. 40”; Chief Oncologist, Health Department of St. Petersburg; b40@zdrav.spb.ru; ORCID: <http://orcid.org/0000-0001-5318-26-19>