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Реферати

САМООЦЕНКА СТУДЕНЧЕСКОЙ МОЛОДЕЖЬЮ СОСТОЯНИЯ ЛИЧНОГО ЗДОРОВЬЯ И ХАРАКТЕРИСТИКА ИХ ОБРАЩЕНИЙ ЗА МЕДИЦИНСКОЙ ПОМОЩЬЮ

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В статье приведены результаты изучения самооценки студенческой молодежи состояния личного здоровья и характеристики их обращений за медицинской помощью. В ходе исследования опрошено 446 студентов разных факультетов. Анализ полученных данных указывает на то, что своё здоровье как хорошее оценили 45 (10,2±1,5%) и как удовлетворительное 116 (26,0±2,2%) опрошенных студентов. Остальные студенты имеют хронические заболевания. При этом 249 (55,8±2,5%) опрошенных имеют хронические заболевания, а 315 (70,6±2,3%) ежегодно заболевают острыми болезнями. В структуре как показателей заболеваемости, так и распространенности болезней первые места занимают болезни органов дыхания, болезни органов пищеварения и болезни костно-мышечной системы и соединительной ткани. Статистически достоверных отличий по факультетам обучения в показателях самооценки здоровья выявлено не было. При этом установлено, что 316 (70,8±2,3%) студентов прикрепилась для получения первичной помощи к врачам общей практики-семейным врачам. За медицинской помощью обращалось 317 (71,1±2,3%) студентов, в том числе с профилактической целью 143 (32,1±2,3%).

Ключевые слова: студенты, состояние личного здоровья, обращение за медицинской помощью.

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SELF-ASSESSMENT OF STUDENT YOUTH STATE OF PERSONAL HEALTH AND CHARACTERISTIC OF THEIR APPLICATIONS FOR MEDICAL CARE

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The article presents the results of the study on students' self-estimation of the their personal health status and features of their requests for medical care. During the study, 446 students of various faculties were interviewed. The obtained data analysis indicates that 45 (10.2 ± 1.5%) and 116 (26.0 ± 2.2%) of the students surveyed rated their health as good. The remaining students have chronic diseases. At the same time, 249 (55.8 ± 2.5%) of the respondents have chronic diseases, and 315 (70.6 ± 2.3%) annually fall ill with acute diseases. In the structure of both the morbidity indices and the prevalence of diseases, the first places are occupied by respiratory diseases, digestive diseases and diseases of the musculoskeletal system and connective tissue. There were no statistically reliable differences between the educational departments in terms of health self-estimation. It was found that 316 (70.8 ± 2.3%) students applied to general practitioners, family doctors, for primary care. 317 (71.1 ± 2.3%) students applied for medical help, including 143 (32.1 ± 2.3%) for preventive purposes.

Key words: students, personal health status, seeking medical care.

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APPLICATION OF BRACHYTHERAPY IN CHEMORADIATION OF SECONDARY VAGINAL CANCER USING DIFFERENT SOURCES OF RADIATION

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Comprehensive conservative treatment was carried out for 93 patients with secondary vaginal cancer (SVC). Patients were divided into 3 groups depending on the source (^{192}Ir , ^{60}Co) and mode of brachytherapy (BT). There were two study groups being performed high-energy (HDR) BT with ^{192}Ir source in different modes and the comparison group, being performed HDR BT with ^{60}C sources. The treatment was carried out against the background of chemosensitizing agents. It was found that the positive response of the tumor after the course of chemo-radiation therapy was increased by 11.5% and 9.7% compared to the comparison group in the SVC patients of the studied groups. The toxic effects of treatment by the number and degree in patients did not exceed the second degree. Thus, the proposed techniques of high-energy BT in SVC patients are efficient and do not have excessive toxicity.

Keywords: high-energy brachytherapy, ^{192}Ir , ^{60}Co , secondary vaginal cancer.

The article is a fragment of the research project "To develop methods of chemoradiation treatment of patients with secondary (metastatic) vaginal cancer using different sources of radiation" (state registration No. 0117U000406).

Secondary vaginal cancer (SVC) occurs by direct transition or as a result of metastasis from the uterine cervix, body of the uterus, ovaries and other organs. Thus, metastases of uterine cervical cancer (UCC) into the vagina occur in 6% (according to some authors up to 33%), metastases of uterine body cancer - in 8-10% of patients treated by surgical, combined or radiological methods. [1, 4, 7, 10, 12].

Metastatic tumors are more frequently localized on the anterior wall of the vagina and in its lower third. The histological structure of the secondary cancer mainly corresponds to the primary location of the tumor. Surgical treatment in such patients is not used, as a rule, due to the presence of postoperative or

radiation adhesions, as well as due to the risk of damage to the bladder or rectum. Therefore, patients who have metastases of uterine cervix or body cancer into the vagina are treated with radiotherapy. Development of radiation treatment methods, implementation of modern radiation therapy (RT) methods into clinical practice and the possibility of obtaining satisfactory results with a low incidence of complications permits to consider combined radiation therapy (CRT) the main method of SVC treatment [1, 3, 5, 8, 13]. Radiation treatment includes remote irradiation of the tumor, pathways of regional distribution and contact radiation exposure directly to the primary site. Its methodology depends on the location of the tumor and the process extent. When localizing a tumor in the area of the vaginal arches, the parametric regions of pelvis, uterine cervix, and upper third of the vagina should be included into the irradiation area. This goal is consistent with combined radiation therapy (CRT), which is performed on the same principle and at the same doses as in patients with cervical cancer (CC) [6-9].

If the tumor damaged the middle or lower third of the vagina, it is more appropriate to use the methodological principles that applied in the treatment of the external genitalia. Most European authors prefer the sequential use of remote RT (RRT) and brachytherapy (BT) [12, 14]. Progressing tumors are characterized by significant heterogeneity in cellular composition and inhomogeneity in oxygen saturation, which adversely affects their radiosensitivity, i.e., the intensity of cytoreductive processes in response to the ionizing radiation action [2, 13]. Therefore, for complete eradication of tumor cells, it is advisable to use the latest conformal RT technologies [4, 15].

In order to improve the radiation treatment efficacy in SVC patients, today, the BT sources of high activity (HDR - high dose rate) are used with ever increasing frequency in the world. The main advantage of BT is the ability to bring maximum doses of radiation directly to the tumor site with minimal effect on critical and adjacent organs. The combination of BT with DRT is the "gold standard" in the world for the treatment of the reproductive system tumors in women. Today it is a state-of-the-art, high-tech, efficient, organ-preserving component of radical radiation gynecological cancer treatment that minimizes radiation loads on normal tissue surrounding the tumor. Choice of the ionizing radiation source, the value of the total focal dose (TFD), the mode of its fractionation is determined by the extent of the process, the hardware of the institution and the previous remote radiation [8, 9, 14].

Recently, in many leading European clinics, for the up-to-date contact radiotherapy of VC, brachytherapy installations are most frequently used with high (more than 12 Gy / h) radiation dose rate (HDR), with ionizing radiation sources (IRS) Iridium-192 (^{192}Ir) and cobalt-60 (^{60}Co). Given that the half-life of ^{192}Ir is less than that of ^{60}Co by 22 times, it can be used in fractional irradiation. The ^{192}Ir source also has a short session time, permitting more patients to be treated compared to using a ^{60}Co radiation source [3, 5, 12].

However, despite the known physico-dosimetric characteristics of the therapeutic gamma radiation sources ^{192}Ir and ^{60}Co , further, more in-depth studies and development of methods for their use are needed.

The purpose of the study was to assess the efficacy and toxicity of radiation treatment in patients with SVC by determining the optimal BT methods depending on the type of radiation sources with the use of chemoradio modifiers during CRT.

Materials and methods. The clinic of the National Cancer Institute installed a device for high-energy BT in the department of radiation oncology with a source of high-activity gamma radiation ^{192}Ir . This unit is a new generation apparatus for BT, which is used in the CRT in all cancer and gynecologic diseases, including those with SVC.

In order to study the efficacy of the new radiation source - ^{192}Ir in contact RT, during 2017–2019, a survey and chemoradiation treatment of 93 patients with SVC (metastatic lesions of the vagina in CC at stages II-III, T2-3N0-1M0) was performed.

The study was carried out in accordance with the principles of the Helsinki Declaration. Informed consent was obtained from all the patients in the study.

The criteria for engaging patients in the study were: morphological identification of SVC, age from 29 to 70 years, no contraindications to cytotoxic therapy, the prior special treatment for CC, informed written consent of patients to participate in the study and their awareness of possible toxicities, patient's condition by ECOG – 0-2. The exclusion criteria were: participation in any other clinical study during the last 30 days, concomitant pathology in the decompensation condition (grade III heart failure, chronic grade III-IV renal failure, liver failure, uncompensated renal dysfunctions, pancreatic disorders, external respiration dysfunctions, etc.), mental disorders, acute infectious diseases, which is a contraindication to RT, the presence of another tumor (solid malignancy). The criteria for patient attrition from the study were: full-blown toxic complications in treatment, non-compliance with treatment regimen by the patient, refusal of the patient to participate in the study. The morphological structure of vaginal malignant tumors was

dominated by epidermoid cancer of various differentiation degrees, out of which highly differentiated cases were in 10 patients ($10.7 \pm 6.3\%$), moderately differentiated - in 29 ($31.2 \pm 9.4\%$), low differentiated - in 26 ($28.6 \pm 9.1\%$) patients, in 28 patients ($30.1 \pm 9.3\%$) tumors of adenogenic origin were found.

Regarding the growth pattern, only mixed SVC forms were observed. Exo-endophytic carcinomas with the pronounced exophytic component of epidermoid origin with various degrees of differentiation were found in 44 ($47.3 \pm 10.1\%$) patients. Vaginal tumors of mixed nature with a more pronounced endophytic component were observed in 49 ($52.7 \pm 10.1\%$) patients, including carcinoma of adenogenic origin - in 15 ($16.1 \pm 7.4\%$) patients.

Involvement of the vaginal cuff and the upper third of the vagina in the carcinoma process was diagnosed in 24 ($25.8 \pm 8.7\%$) patients. In 21 ($22.6 \pm 8.5\%$) patients, complete infiltration of the vaginal walls was combined with the extension of the process to the vaginal arches, in 25 ($26.9 \pm 9.0\%$) ones - metastatic lesions of the vaginal walls were found in the middle third, in 29 ($31.2 \pm 9.4\%$) ones - in the lower third of the vagina. Deformation of the tumor on the posterior wall of the bladder was observed in 12 ($12.9 \pm 6.8\%$) patients. Out of 93 patients examined, iliac lymph node lesions were diagnosed on one side in 22 patients ($23.7 \pm 8.6\%$), on both sides - in 12 ($12.9 \pm 6.8\%$) patients. In 15 ($16.1 \pm 7.4\%$) patients obstructive ureterohydronephrosis of one kidney was established, in 18 ($19.4 \pm 8.0\%$) patients simultaneous lesions in the middle and lower third of the vagina were found.

All patients were carefully examined to determine the limits of the tumor process, its features, the status of critical organs, the presence / absence of concomitant pathology. Thus, before the start of treatment, patients underwent a comprehensive examination, which included: clinical examination to determine the visual and palpatory parameters of the primary tumor focus; comprehensive ultrasonographic examination, computed tomography (CT) of the chest, abdomen and pelvis organs, magnetic resonance imaging (MRI) of the pelvic organs; cystoscopy and fibrorectosigmoidoscopy (determining the process extent and the presence / absence of pathological processes that may complicate chemoradiation therapy (CRT) and / or lead to undesirable toxic complications and necessitate dose reduction); laboratory tests (hemogram, urine test, biochemical blood count and coagulogram); in case of suspected / present concomitant pathology and complications of the underlying disease - additional adequate examinations were performed.

Among general somatic and concomitant gynecological diseases the following were more frequently recorded in the anamnesis: pathology of the urinary system (pyelonephritis - in 18 ($19.4 \pm 8.0\%$), cystitis - 19 ($20.4 \pm 8.2\%$) patients); chronic inflammation of the uterine appendages - in 12 ($12.9 \pm 6.8\%$) patients; chronic gastrointestinal diseases - in 15 ($16.1 \pm 7.5\%$); diabetes at the stages of compensation and subcompensation - in 6 (6.6 ± 4), 9%) patients, chronic pathology of the cardiovascular system - in 24 ($25.8 \pm 8.9\%$) patients. The general patients' health condition was 1-2 points by the ECOG / WHO Performance status scale [2].

Depending on the source and mode of exposure at contact RT, all patients were divided (by random numbers) into two main groups and a comparison group. The groups of patients were homogeneous with respect to the main characteristics (age, stage of the disease, concomitant pathology). The mean age of the patients was 57.3 ± 5.2 years (29 to 70 years).

Main group I - 31 patients with SVC, who were performed conformal RT (CRT) according to the standard procedure (to the pelvis area with a single tumor dose (STD) 2.0 Gy to total radiation dosage (TRD) 46 Gy, taking into account the radiation dose of the previous radiation treatment) and HDR BT by ^{192}Ir source with irradiation mode: STD 3 Gy x 3 times a week, up to the TRD of 39 Gy to vaginal mucosa for 13 fractions.

Main group II - 32 SVC patients exposed to CRT according to the standard procedure, taking into account the previous radiotherapy and HDR BT by ^{192}Ir source irradiation mode: STD 5 Gy x 2 times a week, up to the TRD of 40 Gy to vaginal mucosa for 8 fractions.

Group III Comparison included 30 patients with SVC who underwent CRT according to the standard procedure (taking into account the previous radiotherapy) and HDR BT by ^{60}Co sources under the irradiation regime: STD 5 Gy x 2 times a week, up to the TRD of 40 Gy to vaginal mucosa for 8 fractions.

Patients of all groups were performed CRT against the background of chemoradio modifying agents: tegafur orally 235 mg / m^2 x 2 times a day during the whole course of CRT and cisplatin 30 mg / m^2 once a week intravenously by drop infusion No. 4-6, up to the total course dose (TCD). 200-300 mg.

When designing a course of CRT, it is essential to take into account the doses of the previous RT, since the study included patients with SVC. At the same time we proceeded from the necessity of bringing to the tumor foci and zones of its regional distribution carcinocidal doses of radiation energy. CRT of SVC localized in the upper 1/3 of the vagina and vaginal cuff were treated accordingly for cancer of the uterine

cervix cuff. In CRT of patients with middle and lower 1/3 of the vagina, the target of irradiation included the vagina throughout its entire length, paracolpal fiber, regional lymph nodes depending on the localization of the process. Taking into account individual parameters of the tumor focus, computer-aided design determined the single tumour dose (STD), TRD and the mode of their application.

After determining the boundaries of the tumor process, its features, the status of the critical organs, the presence / absence of concomitant pathology, and the morphological identification of the tumor, proper planning of conservative SVC treatment was performed.

All patients were given a course of CRT successively in two stages. In the case of not performing of remote irradiation in the previous treatment, patients at CRT stage I with the linear electron accelerator apparatus, with the 6 MeB bremsstrahlung energy with obligatory pre-radiation 3D topometric CT preparation with the function of virtual simulation using computer-aided Eclipse planning system and generating the three-dimensional model of the patient, conformal RRT was performed: to pelvic area (tumor and areas of its regional distribution), the STD was 2 Gy x 5 times a week up to TRD of 46 Gy. By means of special fixation devices (masks, footrests), all patients were fixed with the subsequent rendering of reference marks on the immobilizing mask.

In total, the CRT dose made up to 80-90 Gy to the tumor site and 44-46 Gy to zones of regional metastasis, taking into account the dose summarized in the previous course of CRT.

Statistical processing of the obtained results included: calculation of primary statistic indices; identification of differences between the groups by statistical characteristics; establishing the correlation between variables using parametric and non-parametric correlation analysis by the Wald-Wolfowitz method [11].

Results of the study and their discussion. Analysis of the immediate results of the conservative therapy efficacy in SVC patients was performed according to the degree of the primary tumor focus regression and the presence / absence of toxic manifestations after treatment. According to the recommendations of the World Health Organization (WHO), tumor regression was determined according to dynamic monitoring of clinical indices of the tumor process in comparison with the data obtained using modern imaging tools (comprehensive sonographic examination, CT, MRI). According to the immediate CRT results in SVC patients, it was found that application of HDR BT using ^{192}Ir source according to the developed procedures in patients of main groups I and II compared to patients of the comparison group, who were performed HDR BT using ^{60}Co source under the classical mode of dose fractionation according to irradiation standards for treatment of cancer profile patients, increased the frequency and regression degree of cervical carcinoma.

Thus, the positive tumor response (complete + partial regression) in SVC patients after the complete CRT course has grown by 11.5% in the first study group and by 9.7% in the second study group compared to the use of ^{60}Co HDR BT in the comparison group. During 6 months with dynamic observation, the tumor process progression signs were not detected in any patient.

The tumor regression data in SVC patients immediately after the CRT course, depending on the applied BT method are presented in table 1.

Table 1

Tumor regression in patients with secondary vaginal cancer immediately after treatment, depending on the brachytherapy method applied

Method of treatment	Tumor regression degree (number of patients, n and%)			
	Complete regression	Partial regression > 50 %	Process stabilization (regression < 50 %)	Process progression
Main group I (^{192}Ir HDR BT) STD = 3 Gy x 3 t/week, n = 31	6 (19.4 ± 6.9 %)	12 (38.7 ± 8.5 %)	13 (41.9 ± 8.6 %)	—
Main group II (^{192}Ir HDR BT) STD = 5 Gy x 2 t/week, n = 32	6 (18.8 ± 6.7 %)	12 (37.5 ± 8.3 %)	14 (43.7 ± 8.6 %)	—
Comparison group III (^{60}Co HDR BT) STD = 5 Gy x 2 t/week, n = 30	4 (13.3 ± 6.6 %)	10 (33.3 ± 8.6 %)	16 (53.3 ± 8.9 %)	—

$P_{1,k} = 0.51$; $P_{2,k} = 0.79$

It should be noted that there is a tendency to increase the regression of tumors in patients of group I, who were treated with HDR BT sources of ^{192}Ir by the STD mode = 3 Gy x 3 times a week as opposed to the STD mode = 5 Gy x 2 times a week, which was applied in patients of group II. These data are consistent with the results of many European studies [3, 5, 8, 14].

It should be noted that, analyzing the early local toxicity of radiation treatment in SVC patients, depending on the developed methods of HDR BT sources ^{192}Ir against the use of chemoradio modifiers (main groups) and the classical mode of radiation dose fractionation with source ^{60}Co in HDR BT (comparison group), in no patient during the treatment and the next 3 months after its completion, no severe (higher than degree II) manifestations of bladder and rectal toxicity were observed. Local grade I mucositis in the upper third of vagina in the form of mucus hyperemia was observed in the vast majority of patients in all groups.

Membranous vaginal epithelitis (toxicity grade II) was noted more frequently in patients with a pronounced exophytic component of the tumor at the stage of decay, which was accompanied by the presence of pathogenic flora. The patients underwent vaginal sanitation with antibacterial drugs according to antibiotic sensitivity, which had positive results and permitted them to continue the course of radiation treatment until its completion.

Early radiation cystitis degrees I and II was observed mainly in elderly women and in patients with chronic concomitant urological pathology in the vast majority, regardless of the HDR BT technique.

True early radial rectitis degree II was not detected in the CRT process. Exacerbations of chronic hemorrhoids and / or enterocolitis phenomena, which rarely developed against conformal RT, were predominantly observed. Any increase in the number and manifestations of local toxicity in the rectum in patients who underwent HDR BT according to the developed methods, was not observed. Characteristics of early general and local manifestations of toxicity in the CRT process in SVC patients, depending on the applied BT method are presented in table 2.

Table 2

Characterization of early local radiation responses during conservative treatment of patients with secondary vaginal cancer depending on the brachytherapy method

Response and complications	Groups of patients depending on the BT methods		
	Main group I (^{192}Ir HDR BT) STD = 3 Gy x 3 t/week, n = 31	Main group II (^{192}Ir HDR BT) STD = 5 Gy x 2 t/week, n = 32	Comparison group III (^{60}Co HDR BT) POД = 5 Gy x 2 t/week, n = 30
	Number of patients, n та (%)	Number of patients, n та (%)	Number of patients, n та (%)
Epidermitis / epitheliitis at the end of CRT course:			
Degree I	12 (38.7±8.5) / 12 (38.7±8.5)	12 (37.5±8.3) / 14 (43.7±8.6)	17 (56.7±8.8) / 16 (53.3±8.9)
Degree II	3 (9.6±5.2) / 3 (9.6±5.2)	3 (9.4±5.1) / 3 (9.4±5.1)	4 (13.3±5.3) / 6 (20±7.1)
Degree III	–	–	–
Degree IV	–	–	–
Epidermitis: $P_{1-k}=0,052$; $P_{2-k}=0,010$ Epitheliitis: $P_{1-k}=0,052$; $P_{2-k}=0,0003$			
Rectitis / enterocolitis:			
Degree I	6 (19.4±6.9) / 3 (9.6±5.2)	6 (18.8±6.7) / 3 (9.4±5.1)	8 (26.7±7.9) / 4 (13.3±5.3)
Degree II	3 (9.6±5.2) / 3 (9.6±5.2)	3 (9.4±4.7) / 3 (9.4±5.1)	6 (20±7.1) / 4 (13.3±5.3)
Degree III	–	–	–
Degree IV	–	–	–
Rectitis: $P_{1-k}=0,028$; $P_{2-k}=0,021$ Enterocolitis: $P_{1-k}=0,014$; $P_{2-k}=0,0003$			
Cystitis:			
Degree I	6 (19.4±6.9)	6 (18.8±6.7)	11 (36.7±8.6)
Degree II	3 (9.6±5.2)	3 (9.4±5.1)	6 (20±7.1)
Degree III	–	–	–
Degree IV	–	–	–
$P_{1-k}=0,0001$; $P_{2-k}=0,01$			

It should be noted the decrease in the manifestations of CRT toxicity, namely early radiation responses from tumor- adjacent critical organs in patients of main groups I and II, compared to patients in the comparison group, particularly in main group I, where the ^{192}Ir radiation source was used in the STD mode = 3 Gy x 3 times a week. The decrease in the percentage and degree of early local radiation responses in the mucous membrane of the vagina, as well as their number and degree in the critical organs when using ^{192}Ir HDR BT, is most likely due to a steep decline in the dose of ionizing radiation inherent in the ^{192}Ir source, unlike the ^{60}Co radiation source. In general, the results of our study are consistent with the data of world and European researchers [3, 5, 8, 12, 14, 15].

The study is ongoing.

Conclusions

1. Performing brachytherapy at the present stage using sources of high-power ionizing radiation (HDR) with combined radiation therapy for patients with secondary vaginal cancer, permits to concentrate for a short time high doses of energy in a limited tissue amount that considerably enhances the therapeutic effect with the minimum radiation load to critical organs.

2. The analysis of the immediate treatment results in patients with secondary vaginal cancer shows the efficacy of the developed of intracavitary HDR brachytherapy methods with the ^{192}Ir source, compared to the ^{60}Co source as it contributes to a significant increase in the secondary vaginal tumors regression, reducing the frequency of radiation responses from the critical organs.

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Реферати

**ЗАСТОСУВАННЯ БРАХІТЕРАПІЇ
У ХІМІОПРОМЕНЕВОМУ ЛІКУВАННІ
ВТОРИННОГО РАКУ ВАГІНИ
З ВИКОРИСТАННЯМ РІЗНИХ ДЖЕРЕЛ
РАДІАЦІЇ**

**Іванкова В.С., Барановська Л.М., Матвієвська Л.В.,
Хруленко Т.В.**

Проведено комплексне консервативне лікування 93 хворих на вторинний рак вагіни (ВРВ). Хворі розподілені на 3 групи залежно від джерела (^{192}Ir , ^{60}Co) і режиму брахітерапії (БТ). Дві досліджувані групи, яким проводили високоенергетичну (HDR) БТ джерелом ^{192}Ir за різними режимами та група порівняння, яким HDR БТ була проведена джерелами ^{60}Co . Лікування проводили на тлі хіміосенсибілізуючих засобів. Встановлено, що у хворих на ВРВ досліджуваних груп позитивна відповідь пухлини після курсу хіміопротеневої терапії збільшилась на 11,5 % та 9,7 % порівняно з групою порівняння. Токсичні ефекти лікування за кількістю і ступенем у хворих не перевищували II ступеня. Таким чином, запропоновані методики високоенергетичної БТ хворих на ВРВ ефективні і не мають надмірної токсичності.

Ключові слова: високоенергетична брахітерапія, ^{192}Ir , ^{60}Co , вторинний рак вагіни.

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**ПРИМЕНЕНИЕ БРАХИТЕРАПИИ
ПРИ ХИМИОЛУЧЕВОМ ЛЕЧЕНИИ ВТОРИЧНОГО
РАКА ВАГИНЫ С ИСПОЛЬЗОВАНИЕМ
РАЗЛИЧНЫХ ИСТОЧНИКОВ РАДИАЦИИ**

**Иванкова В.С., Барановская Л.М., Матвиевская Л.В.,
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Проведено комплексное консервативное лечение 93 больных вторичным раком влагалища (ВРВ). Больные распределены на 3 группы в зависимости от источника излучения (^{192}Ir , ^{60}Co) и режима брахитерапии (БТ). Две исследуемые группы, которым проводили высокоэнергетическую (HDR) БТ источником ^{192}Ir в разных режимах и группа сравнения, которым HDR БТ была проведена источниками ^{60}Co . Лечение проводилось на фоне химиосенсибилизирующих препаратов. Установлено, что у больных ВРВ исследуемых групп положительный ответ опухоли после курса химиолучевой терапии увеличился на 11,5 % и 9,7 % в отличие от группы сравнения. Токсические эффекты лечения по количеству и степени у больных не превышали II степени. Таким образом, предложенные методики высокоэнергетической БТ больных ВРВ эффективные и не приводят к чрезмерной токсичности.

Ключевые слова: высокоэнергетическая брахитерапия, ^{192}Ir , ^{60}Co , вторичный рак влагалища.

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