SPECIALIZED MEDICAL CARE FOR PATIENTS WITH MALIGNANT NEOPLASMS OF THE MAXILLOFACIAL AREA IN THE PENZA REGION OF RUSSIA

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Abstract

This article analyzes domestic and foreign sources, regulatory documents of the Russian Federation, in order to determine the etiological factors of oral cancer, assess the statistical data on morbidity and mortality from malignant neoplasms of the maxillofacial region in the Penza region. The results of changing the routing, an interdisciplinary approach to treating patients with malignant neoplasms of the maxillofacial region in the Penza region are presented. The epidemiology, clinical manifestations, main diagnostic methods, routing, treatment and rehabilitation of patients with head and neck oncology are considered. The results of treatment of patients with oral cavity and lower lip cancer using photodynamic therapy (PDT), both alone and in combination with radiation and chemotherapy, are analyzed. The study showed that PDT of tumors of the lower lip and buccal mucosa in mono-mode made allowed achieving 100% efficiency. After the completed treatment, all participants in the experiment were provided with a complex of rehabilitation, including nutritional support, psychological assistance, exercise therapy, training in correct swallowing tactics, percutaneous endoscopic gastrostomy, and a course of oral cavity massage. An interdisciplinary approach to treating malignant neoplasms of the maxillofacial region is the most correct in modern practice.

Keywords: photodynamic therapy, malignant neoplasms, routing, lower lip cancer, oral cancer, interdisciplinary approach.
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СПЕЦИАЛИЗИРОВАННАЯ МЕДИЦИНСКАЯ ПОМОЩЬ ПАЦИЕНТАМ СО ЗЛОКАЧЕСТВЕННЫМИ НОВООБРАЗОВАНИЯМИ ЧЕЛЮСТНО–ЛИЦЕВОЙ ОБЛАСТИ В ПЕНЗЕНСКОМ РЕГИОНЕ РОССИИ

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Резюме

Проведен анализ отечественных и зарубежных источников, нормативно–правовых документов Российской Федерации с целью определения этиологических факторов риска развития рака полости рта. Оценены статистические данные о заболеваемости, смертности от злокачественных новообразований челюстно-лицевой области (ЗНО ЧЛО) населения Пензенской области. Приведены результаты изменения маршрутизации, междисциплинарного подхода к лечению пациентов с ЗНО ЧЛО в регионе. Рассмотрены эпидемиология, клинические проявления, основные методы диагностики, маршрутизация, лечение и реабилитация пациентов с онкологической патологией головы и шеи. Проанализированы результаты лечения больных раком полости рта и нижней губы методом фотодинамической терапии (ФДТ) как в самостоятельном варианте, так и в комбинации с лучевой и химиотерапией. Проведенное исследование показало, что ФДТ опухолей нижней губы и слизистой оболочки щеки в монорежиме позволяла достичь полного регресса опухоли в 100% наблюдений. После лечения всем участвующим в исследовании были проведены реабилитационные мероприятия, включавшие нутритивную поддержку, психологическую помощь, лечебную физкультуру, обучение правильной тактике глотания, перкутанную эндоскопическую гастростомию, курс массажа полости рта. Сделан вывод о том, что междисциплинарный подход к лечению больных ЗНО ЧЛО является наиболее эффективным в современной практике.

Ключевые слова: фотодинамическая терапия, злокачественные новообразования, маршрутизация, рак нижней губы, рак полости рта, междисциплинарный подход.

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Introduction

The high disease incidence and mortality of patients as a result of untimely diagnosis and treatment of malignant neoplasms (MNO) dictates the need to search for new approaches to the provision of specialized medical care to cancer patients. On February 5, 2019, the order of the Ministry of Health of Russia No. 48n "On Amendments to the Procedure for the Delivery of Medical Care to the Population in the field of Oncology" was issued, approved by order of the Ministry of Health of Russia dated November 15, 2012 No. 915n, the purpose of which is to improve the organization of medical care in the field of oncology for the adult population [1].

Currently, in the surgical department No. 4 of the State Budgetary Healthcare Institution "Regional oncologic dispensary" in Penza, patients with suspected head and neck cancers are being treated. There is no maxillofacial surgeon on the staff of the department, and there is no maxillofacial surgery department in the institution itself. Until 2020, patients with suspected malignant neoplasm of the maxillofacial area (MNO MA) lost a lot of time from the moment of diagnosis to accurate verification of the diagnosis.

In December 2020 as part of the order on the basis of the State Budgetary Healthcare Institution "Penza regional hospital named after N.N. Burdenko", the Center for outpatient oncological care (COOC) was opened, in the structure of which there is a Center for Maxillofacial Surgery. The aim of the COOC is the early detection of malignant neoplasms and ensuring the availability of antitumor therapy. The opening of the Center made it possible for patients with head and neck neoplasms to receive qualified interdisciplinary assistance, including consultation of a case conference (oncologist, radiotherapist, maxillofacial surgeon, otorhinolaryngologist), the ability to perform tissue biopsy, laboratory and clinical investigations: computed tomography (CT), magnetic resonance imaging (MRI) and ultrasound investigation (ultrasound). After receiving the research results and establishing diagnosis, patients from the COOC within 5 days are sent to the State Budgetary Healthcare Institution "Regional oncologic dispensary" to receive antitumor therapy.

Malignant tumors of the head and neck in the structure of the general oncological morbidity account for up to 20%. All over the world, over the past ten years, there has been a tendency of an increase in the number of newly diagnosed neoplasms of the head and neck by 25%. According to Rosstat, in 2018 Oral cancer among men amounted to 6.65 cases, among women - 1.99 per 100 thousand of the population of the corresponding sex (Table 1) [2]. In 2019, 9287 new cases of malignant tumors of the oral mucosa were recorded in Russia, and a rejuvenescence of the average age of newly diagnosed patients was noted. At present, the World Health Organization has registered more than 4 thousand new cases of head and neck cancer, of which 600 cases have already been observed with ulceration of an oral tumor. Cancers of the maxillofacial area are 5–7 times more common in men than in women. Mortality in malignant tumors of the oral mucosa is close to 50% [3].

In the mortality structure among the population of the Penza region, MNO takes the second place. In 2017, in the structure of overall cancer mortality, mortality from oral cancer was 6.1% in men and 0.5% in women [4].

Oncological pathology of the maxillofacial area in most cases is represented by cancer of the mouth bed, tongue, lips, jaws, salivary glands, posterior pharyngeal wall, tonsils. Melanoma and lymphoma account for less than 10% of cases of oral cancer. The share of the lower lip cancer accounts for 85–90%, while there is a negative trend towards an increase in the incidence of the male population [5].

Lip cancer is more common in comparison with neoplasms of other parts of the maxillofacial area. Malignant tumors of the lip develop from the stratified squamous epithelium of the red border with secondary lesions of the skin and mucosa. They have the structure of squamous cell keratinizing or non-keratinizing squamous cell carcinoma [6].

According to X. Jiang, one of the causes of oral cancer is nicotine addiction [7]. The risk of oral cavity and pharynx cancer in smokers is 2–3 times higher than in nonsmokers; in those who smokes more than one pack of cigarettes a day, the relative risk of cancer is 10 times higher. Individuals who are carriers of human papillomavirus type 16 (HPV 16) and herpes simplex virus (HSV-1) have an increased risk of developing oral cancer. According to K. M. Zharikov, malnutrition can be the cause of cancer of the oral cavity and nasopharynx [8]. Chronic infection in the oral cavity and chronic trauma to the oral mucosa with destroyed teeth and their roots, poorly manufactured prostheses, a long-term non-healing fracture, recurrent erosion of the red border of the lip are risk factors for the development of the MNO [9].

Таблица 1
Динамика заболеваемости населения злокачественными новообразованиями челюстно–лицевой области, абс. ч.
Table 1
Dynamics of population morbidity with malignant neoplasms of the maxillofacial region, abs. number

	2016	2017	2018
Всего, тысяч человек Total, thousand people			
Все злокачественные новообразования All malignant neoplasms	599,3	617,2	624,7
Из них Of them:			
Мужчины Male	273,6	281,9	285,9
Женщины Female	325,8	335,3	338,8
Из них Of them:			
Губы, полости рта, глотки Lips, mouth, pharynx	14,3	14,2	14,8
Из них Of them:			
Мужчины Male	10,4	10,4	10,7
Женщины Female	3,9	3,9	4,1

The first clinical manifestation of malignization is the appearance of a neoplasm on the mucosa (submucous layer) of the lips or in the oral cavity, which persists for a long time with a tendency to grow. The formation can be presented in the form of a red or whitish spot, ulcer, induration, emerod. With the appearance of new symptoms due to discomfort during eating and talking, the patient may complain of thickening and numbness of the tongue, numbness of the gums and parts of the teeth of the corresponding half, loss of teeth, swelling of the jaw, constant pain in the oral cavity and enlargement of the submandibular lymph nodes, voice changes.

Primary diagnostics is carried out at an appointment with a maxillofacial surgeon and includes visual examination, palpation, measurement of the lesion thickness, clinical examination, tissue biopsy from the lesion focus. To assess the primary size of the tumor and obtain information about the prevalence of tumorous process, specialists use radiation research methods: CT, MRI, ultrasound and positron emission tomography (PET). CT of the maxillofacial area is performed to assess the dentition, the height of the lower jaw in case a part of the lower jaw needs to be resected due to involvement or close proximity to the tumor. At the diagnostic stage, it is important to determine as accurately as possible the prevalence of oral cancer, since the choice of a treatment strategy depends on this.

Currently, when planning personalized effective therapy, it is mandatory to conduct an interdisciplinary case conference, during which clinicians can consider treatment options to reduce the possible side effects of therapy. In cases where consultation of specialists from specialized medical centers located in other cities of Russia is required, telemedicine services are used. No less important for the achievement of the effectiveness of treatment and a good quality of life are the issues of changing the patient's lifestyle, choosing a balanced diet, and psychological assistance.

In the Maxillofacial surgery department of the Penza Regional Hospital. N.N.Burdenko in 2019, 54 patients with malignant neoplasm of the maxillofacial area were identified. The diagnosis and treatment of oral cancer is an interdisciplinary challenge for healthcare professionals. Dental therapist, dental surgeon, otorhinolaryngologist, maxillofacial surgeon, oncologist should together carry out comprehensive diagnostics and select the optimal treatment. Monitoring the disease progression plays a key role in treatment with the purpose of prevention/early detection of recurrence and the development of secondary tumors.

Treatment of malignant neoplasm of the maxillofacial area is a difficult task. The treatment tactics is determined by the prevalence of the tumor process and is mainly based on the use of a combined method, consisting of cytoreductive surgery, chemotherapy and/or radiation therapy. The performance of operations of such a scale is inevitably associated with the devel-

opment of functional and aesthetic disorders, the formation of extensive tissue defects in the maxillofacial area, disability and disablement, depression of the psychoemotional state.

As a result of a radical surgical intervention on the maxillofacial area, the patient's functions of swallowing, breathing and voice formation are impaired, independent nutrition is impossible, the patient is forced to take mashed food through a nasogastric tube. Patients refuse surgical intervention in favor of organ-preserving methods of treatment: radiation or chemotherapy, the possible complications of which can lead to dysfunction of chewing and swallowing, dry mouth, and the development of osteonecrosis of jaws [10].

Until recently, the surgical method of treating patients with oral cancer remained the main one. It includes resective and reconstructive stages and is used most often, but it has a number of serious limitations associated with the anatomical and physiological features of this area [11].

Radiation therapy is also highly effective, but it can be performed independently to achieve complete tumor regression in patients with a localized process. The administration of a carcinocidal dose of radiation can be complicated by a number of side effects, such as damage to healthy tissues surrounding the tumor, followed by the development of fibrosis [12].

The chemotherapeutic method plays an important role in the treatment of patients with head and neck cancer, but in some cases it is contraindicated due to the high risk of adverse reactions and complications [13].

Currently, it is possible to use a new modern method of treating oral cancer - photodynamic therapy (PDT). This method of treatment is relevant for patients with head and neck tumors due to superficial exposure and the absence of pronounced damage to the subiculum. Due to the absence of systemic toxic and immunosuppressive reactions, photodynamic treatment can be performed many times, which is safer for patients of different ages [14, 15, 16, 17].

Materials and methods

In the period from July 01, 2020 to July 01, 2021, 30 patients, admitted to the Maxillofacial surgery department of the Penza Regional Hospital named after N.N. Burdenko with a confirmed diagnosis of malignant neoplasm were treated: C00–C14 according to the ICD code 10. Among them, men predominated (67%). The age of the patients varied from 29 to 69 years, more than 85% of the patients were of working age.

Squamous cell carcinoma of the oral mucosa (60%) was diagnosed in 18 patients, adenocarcinoma of the minor salivary glands (23.3%) in 7, sarcoma was diagnosed in 5 cases (16.7%). In 11 (36.7%) patients, neoplasms were primary, in 19 (63.3%) - recurrent or residual tumors, including: after chemoradiation therapy (10 cases), radiation therapy (4 cases), surgical and combined treatment (5 cases). According to the TNM system, primary tumors T1 were detected in 3 (27.3%), T2 - in 5 (45.5%), T3 - in 1 (9%), T4 - in 2 (18.2%) patients. The distribution of patients depending on the localization of the tumor is presented in table. 2.

Among the concomitant diseases in patients, type II diabetes mellitus prevailed - 14 people (46.7%), then cardiovascular diseases - 11 people (36.7%) and polysubstance dependence - 5 patients (16.6%). Upon admission, all patients underwent a thorough physical examination, including examination and palpation of the lesion, and an assessment of the nutritional status.

From laboratory tests, detailed clinical and biochemical blood tests, a study of the blood coagulation system, and urinalysis were performed. To conduct a cytological examination, the patients underwent sampling of impression smears or scrapings from the surface of erosion, ulceration, and cracks in the oral mucosa. All patients underwent ultrasound of the neck, chest X-ray to detect metastases, CT scan of the facial skeleton with intravenous contrast in order to determine the possible spread of the tumor to the lower/upper jaw, neck vessels, and the base of the skull.

To select the optimal treatment tactics and therapy, the patients were transferred to the State Budgetary Healthcare Institution "Regional oncologic dispensary" in Penza. The main criteria for choosing a treatment method were the histological type of tumor and its localization, degree of prevalence, primary treatment, involvement of the lymph nodes, and the general condition of the patient. Taking into account these criteria, the patients were randomly divided into 3 clinical groups of 10 people each. All patients signed an informed consent form to participate in the study and were informed about treatment regimens and follow-up periods.

The first group was assigned PDT in an independent variant (Table 3). Photolon was used as a photosensitizer at a dose of 1.5–2.5 mg per kilogram of body weight. The calculated dose was dissolved in 200 ml of 0.9% sodium chloride solution and injected for 30 minutes. 3-4 hours after the injection of the drug, a session of local tumor irradiation was performed at a dose of 300 J/cm^2 using a Latus-2 laser apparatus generating radiation with a wavelength of 660 nm. The power density of light radiation was 0.3–0.64 W/cm^2, and the light dose was 100–350 J/cm^2. 30 minutes before the start of the PDT session, the patients underwent premedication by intramuscular administration of promedol (1.0 ml of a 2% solution) and sebazone (2.0 ml of a 0.5% solution).

Patients from the second group participating in the study received treatment, which included a combination of radiation therapy (RT) and PDT. Gamma-therapeutic treatment was performed on a Theratron equinox ap-

Таблица 2
Распределение пациентов в зависимости от локализации и характера опухоли, абс. ч.
Table 2
Distribution of patients depending on the location and nature of the tumor, abs. number

Локализация Localization	Число пациентов Number of patients	Характер опухоли The nature of the tumor	
		Первичная Primary	Рецидивирующая Recurrent
Нижняя губа Lower lip	8	2	6
Язык Tongue	7	3	4
Слизистая оболочка щеки Buccal mucosa	9	5	4
Дно полости рта Oral floor	6	1	5
Всего Total	30	11	19

Таблица 3
Распределение пациентов в зависимости от диагноза и метода лечения, абс. ч.
Table 3
Distribution of patients according to the method of treatment and diagnosis, abs. number

	Количество пациентов Number of patients			
	Группа 1 (ФДТ) Group 1 (PDT)	Группа 2 (ФДТ+ЛТ) Group 2 (PDT + LT)	Группа 3 (ФДТ+ХТ) Group 3 (PDT + HT)	Всего Total
Локализация опухоли **Localization of the tumor**				
Нижняя губа Lower lip	3	2	3	8
Язык Tongue	2	4	1	7
Слизистая оболочка щеки Buccal mucosa	4	2	3	9
Дно полости рта Oral floor	1	2	3	6
Гистологическая классификация **Histological classification**				
Плоскоклеточный ороговевающий рак Keratinizing squamous cell carcinoma	5	0	5	10
Плоскоклеточный неороговевающий рак Non-keratinizing squamous cell carcinoma	3	3	2	8
Аденокарцинома Adenocarcinoma	2	2	3	7
Саркома Sarcoma	1	3	1	5
Рецидивирующие опухоли Recurrent tumors	6	2	3	11
Остаточные опухоли Residual tumors	2	3	3	8
Первичные опухоли Primary tumors	2	5	4	11
Из них: Of them:				
T1	1	2	2	5
T2	1	3	2	6

paratus. Irradiation was performed from 2 opposing lateral fields. In 8 patients, a primary tumor was included in the irradiated volume, in 2 - a primary tumor and lymph nodes. 3 patients developed acute inflammatory reactions of the oral mucosa, they continued treatment after 7-10 days. 5–15 days after radiation treatment, a course of PDT with photolon was carried out according to the same scheme as in the first group. Three patients increased the course of radiation therapy by 1–2 days due to deep tumor tissue infiltration.

The patients of the third group underwent combined treatment, which included chemotherapy (CT) at the first stage and PDT at the second stage. On the first day of treatment, cisplatin was administered at the rate of 100 mg/m2 body surface area. After 24 hours, the patients were injected intravenously with fluorouracil-LENS at a dose of 2800 mg for 72 hours using an infusion syringe pump, and after 7–10 days PDT was performed according to the method described earlier.

When evaluating the effectiveness of treatment, the degree of tumor regression was taken into account (based on visual and morphological studies before and after treatment). Clinical assessment of tumor resorption was carried out according to the system for assessing the therapeutic efficacy of anticancer drugs adopted by the Union for International Cancer Control (UICC), adapted to this study:

– full effect - complete disappearance of all manifestations of the disease, established 2-3 months after treatment;

– partial effect - a decrease in the size of the tumor (or the sum of the areas of all metastases or tumor formations) by at least 50%, established 2-3 months after treatment;

– stabilization - a decrease in tumor size by less than 50% or the absence of signs of tumor growth, established 2-3 months after treatment;

– progression - an increase in the size of the tumor during therapy or the appearance of new site of damage.

Results

The treatment results of patients of all groups were assessed 2–3 months after treatment.

In the first group (n = 10), complete tumor regression was achieved in 7 patients, partial - in 2 patients (one of them had an infiltrative form of cancer of the mouth bed), in 1 patient with ulcerative cancer of the tongue, stabilization of the process was noted. In patients with cancer of the lower lip (n = 3) and buccal mucosa (n = 2), complete regression was recorded. Analysis of the treatment results showed that the effectiveness of PDT depends on the depth of tumor infiltration: the deeper it is, the less the effect of PDT. When PDT was used in patients with cancer of the lower lip and buccal mucosa, we observed a complete regression in 100% of cases, which, in our opinion, in similar clinical situations allows us to recommend PDT as an independent option if it is impossible to prescribe other methods of treatment (Table 4).

In the second group of patients (n = 10), in which a combination of RT and PDT was used, the stabilization of the process was registered in 8 patients. Partial regression was achieved in the treatment of 2 patients (Table 5).

In the third group of patients (n = 10), who were treated with CT followed by PDT, stabilization was obtained in 7 patients with different lesion depths (Table 6). This fact correlates with O'Sullivan's studies related to the

Таблица 4
Медицинская эффективность фотодинамической терапии, абс. ч.
Table 4
Medical effectiveness of photodynamic therapy, abs. number

Нозологическая форма опухоли Nosological form of the tumor	Число пациентов Number of patients	Терапевтическая эффективность Therapeutic effectiveness		
		Полная регрессия Complete regression	Частичная регрессия Partial regression	Стабилизация Stabilization
Нижняя губа Lower lip	3	3	–	–
Язык Tongue	4	2	1	1
Слизистая оболочка щеки Buccal mucosa	2	2	–	–
Дно полости рта Oral floor	1	–	1	–
Всего Total	10	7	2	1

Таблица 5
Медицинская эффективность комбинации лучевой терапии и фотодинамической терапии, абс. ч.
Table 5
Medical effectiveness of combination of radiotherapy and photodynamic therapy, abs. number

Нозологическая форма опухоли Nosological form of the tumor	Число пациентов Number of patients	Терапевтическая эффективность Therapeutic effectiveness		
		Полная регрессия Complete regression	Частичная регрессия Partial regression	Стабилизация Stabilization
Нижняя губа Lower lip	3	–	–	3
Язык Tongue	2	–	1	1
Слизистая оболочка щеки Buccal mucosa	3	–	–	3
Дно полости рта Oral floor	2	–	1	1
Всего Total	10	–	2	8

Таблица 6
Медицинская эффективность комбинации химиотерапии и фотодинамической терапии, абс. ч.
Table 6
Medical efficacy of a combination of chemotherapy and photodynamic therapy, abs. number

Нозологическая форма опухоли Nosological form of the tumor	Число пациентов Number of patients	Частота полных и частичных регрессий, стабилизаций The frequency of complete and partial responses, stabilization		
		Полная регрессия Complete regression	Частичная регрессия Partial regression	Стабилизация Stabilization
Нижняя губа Lower lip	4	–	2	2
Язык Tongue	1	–	–	1
Слизистая оболочка щеки Buccal mucosa	3	–	1	2
Дно полости рта Oral floor	2	–	–	2
Всего Total	10	–	3	7

treatment of hand cancer, where a combination of PDT and chemotherapy was also used, which gave a positive result [13].

The lower treatment efficiency of patients in the second and third groups compared to the first (PDT in monotherapy mode) can be explained by the fact that they included mainly patients with recurrent cancer, and the first group included patients with primary tumors.

One study participant in the first group had side effects: fever, nausea, vomiting; 3 patients noted redness, dryness and flaking of the skin. In the second group, 3 participants noted an increase in temperature and dyspeptic symptoms, 2 out of 10 patients had diarrhea. The most significant side effects were observed in the third group, in which a combination of chemotherapy and PDT was used to treat patients. 4 out of 10 patients had fever,

Таблица 7
Сравнительная характеристика побочных эффектов терапии, %
Table 7
Comparative characteristics of side effects of therapy, %

Признак Feature	Группа 1 (ФДТ) Group 1 (PDT)	Группа 2 (ЛТ+ФДТ) Group 2 (LT+PDT)	Группа 3 (ХТ+ФДТ) Group 3 (HT+PDT)
Лихорадка Fever	10	30	40
Повышение чувствительности к действию света Increased sensitivity to light	70	60	70
Воспалние/изъязвление слизистой Inflammation/ulceration of the mucosa	–	20	10
Тошнота/рвота Nausea/vomiting	10	30	50
Диарея Diarrhea	–	20	60
Покраснение,сухость, шелушение, трещины кожи Redness, dryness, flaking, cracked skin	30	10	10

6 had diarrhea, and 5 had nausea and episodes of vomiting. All patients had a significant percentage of increased sensitivity to light (Table 7).

A complex of rehabilitation actions, including nutritional support, psychological assistance, physiotherapy exercises, was carried out for patients of all groups. Together with doctors, maxillofacial surgeons and oncologists, training in the correct tactics of swallowing was carried out. In order to prevent complications when using nasogastric tubes, 14 (46.7%) patients underwent percutaneous endoscopic gastrostomy. All patients were prescribed a course of oral cavity massage in order to improve the quality of life.

Conclusion

Analysis of the immediate results of the use of PDT with photolon in the treatment of oral cancer, both independently and in combination with radiation and chemotherapy, has shown high efficiency. 2 months after treatment, complete tumor regression was observed in 6 (20%), partial regression - in 9 (30%), stabilization - in 15 (50%) patients. No relapses of the disease were noted during further follow-up. Side effects were expressed in patients who underwent PDT in combination with chemotherapy: nausea, vomiting, fever. Patients of all groups showed increased sensitivity to light. The method of local action on the tumor of the oral mucosa and lower lip can be used in cases when surgical and radiation methods of treatment have already been used before or are not possible.

Among the many options for therapy, it is necessary to choose the optimal treatment tactics, which can only be developed by a consultation with the participation of doctors of several specific specialties, that is, an interdisciplinary approach to the treatment of cancer patients is the most productive in modern practice. Only the combination of the experience and knowledge of an oncologist, radiotherapist, maxillofacial surgeon, dentist, otorhinolaryngologist, thoracic surgeon and neurosurgeon involved in the treatment of a patient with head and neck diseases of oncological genesis helps to achieve the best treatment results.

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