

# ANALYSIS OF THE ACTIVITIES OF THE DEPARTMENT OF ANESTHESIOLOGY AND INTENSIVE CARE of KazIOR FOR 2021-2022

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## ABSTRACT

**Relevance:** The Department of Anesthesiology and Intensive Care of Kazakh Institute of Oncology and Radiology, JSC (KazIOR) is an organized system for providing care to oncological patients, which consists of anesthetic support for all types of oncosurgical operations, postoperative intensive therapy, intensive care for patients in cases of life-threatening conditions during radiation and chemotherapy. High-quality care is possible only with an appropriate level of professional training of medical and nursing staff and a sufficient provision of life-support and monitoring technologies, medicines, and medical products.

**The study aimed to** analyze the work of the Department of Anesthesiology and Intensive Care in 2021-2022 to further improve the quality of specialized anesthetic and resuscitation care to oncological patients at KazIOR.

**Methods:** The reporting documentation on clinical activities of the Department of Anesthesiology and Intensive Care for 2021 and 2022 were analyzed.

**Results:** In 2021-2022, 5517 anesthetics were performed. While the number of anesthetics in 2022 increased by 9.2%, the structure of the types of anesthesia performed remains unchanged. Anesthetic complications were 0.27%, with no anesthetic mortality. The number of patients admitted for postoperative intensive care in 2022 decreased by 6%. The share of patients re-admitted to the Department of Anesthesiology and Intensive Care was 2.1% in 2021 and 2.7% in 2022. The proportion of elderly and senile patients accounted for more than 40% of the intensive care department patients. In 40% of cases, patients suffered from chronic diseases of the cardiovascular system. In the reporting period, the mortality at the Department of Anesthesiology and Intensive Care amounted to 42 cases, including 22 postoperative cases. The postoperative mortality remained approximately the same, while in-hospital and general mortality slightly increased.

**Conclusion:** The reporting documentation analysis for 2021-2022 showed that the number of anesthesia performed and the total number of patients treated in the Department of Anesthesiology and Intensive Care increases annually, which requires further improvement and modernization of the anesthesiology and intensive care service in oncology.

**Keywords:** Department of Anesthesiology and Intensive Care, intensive care, anesthetic management, anesthetic complications, anesthetic mortality.

**Introduction:** Though the first public demonstration of anesthesia dates back to October 16, 1846, anesthesiology as a medical specialty emerged in the second half of the previous century. Further development and allocation of resuscitation and intensive care as a separate specialty were associated with the polio epidemic. In 1952, prof. B.A. Ibsen was the first to create separate intensive care units in Denmark [1, 2].

High-quality anesthesia and resuscitation care require an appropriate level of professional training of medical and nursing personnel and sufficient provision of life support and monitoring technologies, medicines, and medical products.

According to W.L. Lanier, anesthetic mortality in the world by 2000 was 1-2 cases per 200-300 thousand anesthetics [3], while in the 1960-1970s, it amounted to 1 case per 28 thousand anesthetics [4]. The development of anesthesiology and resuscitation as a specialty, the creation and improvement of technologies, and the finding of new safe medicines have reduced anesthetic mortality by almost ten times over the past few decades.

The Department of Anesthesiology and Intensive Care (ICU department) of "Kazakh Research Institute of Oncology and Radiology" JSC was established in 1961 as a laboratory of anesthesiology and resuscitation. Today, it is an organized system for providing resuscitation and anesthetic care to cancer patients. It includes anesthetic support for all kinds of oncosurgical operations, postoperative intensive care, and intensive care for life-threatening conditions in oncological patients of a radiological and chemotherapeutic profile.

The Department is fitted with medical equipment in accordance with the "Standard for Organizing the Provision of Anesthetic and Resuscitation Care in the Republic of Kazakhstan" and the order № KR DSM-167/2020 of October 29, 2020 "On approval of Minimum Standards for Equipping Healthcare Organizations with Medical Devices" [5, 6].

Main activities of the ICU department:

- anesthetic management of oncosurgical operations and perioperative management of oncosurgical patients;
- intensive care for cancer patients;

– advisory assistance to other departments, including at the outpatient level.

**The study aimed to** analyze the work of the Department of Anesthesiology and Intensive Care in 2021-2022 to further improve the quality of specialized anesthetic and resuscitation care to oncological patients in KazIOR.

**Materials and Methods:** The quarterly, semi-annual, and annual reports on the clinical activities of the ICU department for 2021 and 2022 were analyzed.

**Results:**

*Anesthetic and perioperative management*

Perioperative management of patients includes anesthesiological consultation of patients (including at the outpatient level), anesthesiological support for surgical

interventions on the abdominal organs and organs of the retroperitoneal space, small pelvis, organs of the chest, brain and spinal cord, tumors of the head and neck, skin and soft tissues and postoperative management of patients, including observation and treatment in the awakening ward, postoperative intensive care in intensive care and intensive care, as well as counseling of postoperative patients in specialized departments.

In 2021-2022, 5517 anesthetics were performed. While the number of anesthetics in 2022 increased by 9.2%, the structure of the types of anesthesia performed remains unchanged. Anesthesia was provided to patients aged 3 months to 94 years.

Data on the structure and number of anesthetics are presented in Figure 1.

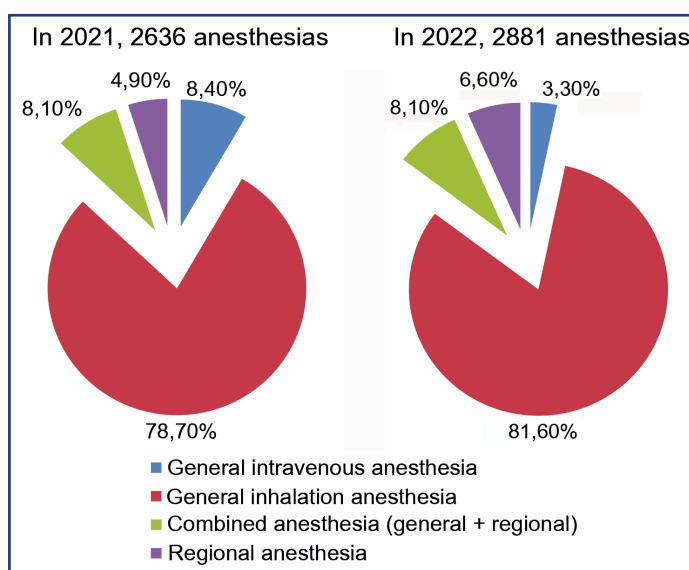


Figure 1 – The structure and number of anesthetics provided at the ICU department of KazIOR, JSC in 2021-2022

In most cases, we performed inhalation anesthesia. According to current data, it is associated with fewer postoperative complications and infections [7]. The pharmacological effects of generation three halogen-containing inhalation anesthetics make them optimal for general anesthesia and agents of choice in modern clinical anesthesiology [8].

Operations on the lower extremities and pelvic organs were performed under regional anesthesia with the preservation of spontaneous breathing.

Total intravenous anesthesia was least frequent and performed in cases where inhalation anesthesia was contraindicated (brain surgery, hemodynamically unstable patients).

Anesthetic complications occurred in 0.27% of cases, which does not exceed global values [9]. See Table 1 for details. Anesthetic mortality was 0% of the total number of anesthetics.

**Table 1 – Anesthetic complications at the ICU department of KazIOR, JSC in 2021-2022**

Complication	Quantity	
	Abs.	% of all patients
Post-puncture pneumothorax	5	0.090%
Difficult intubation	4	0.072%
Dura puncture	3	0.054%
Desaturation in the postoperative period	1	0.018%
Heart arrhythmia	2	0.036%

**Table 2 – Number of patients treated in the post-anesthesia care unit of the ICU department of KazIOR, JSC, in 2021-2022**

Patients/years	2021	2022
Absolute numbers	2232	2564
% of all anesthetics	84.6%	88.9%

In 2022, the number of patients treated in the post-anesthesia care unit increased by 4.3% of all anesthetics performed (Table 2).

*Intensive therapy in the ICU department*

Patients received postoperative intensive care after major surgery, in developing disorders of vital functions during surgery and anesthesia, and in case of severe comorbidity. This category comprised most of the patients

admitted for intensive therapy. The number of patients admitted for intensive postoperative care in 2022 decreased by 6% of the total number of anesthetics, mainly due to an active introduction of Fast-track and ERAS (Enhanced recovery after surgery) concepts (Figure 2) [10, 11].

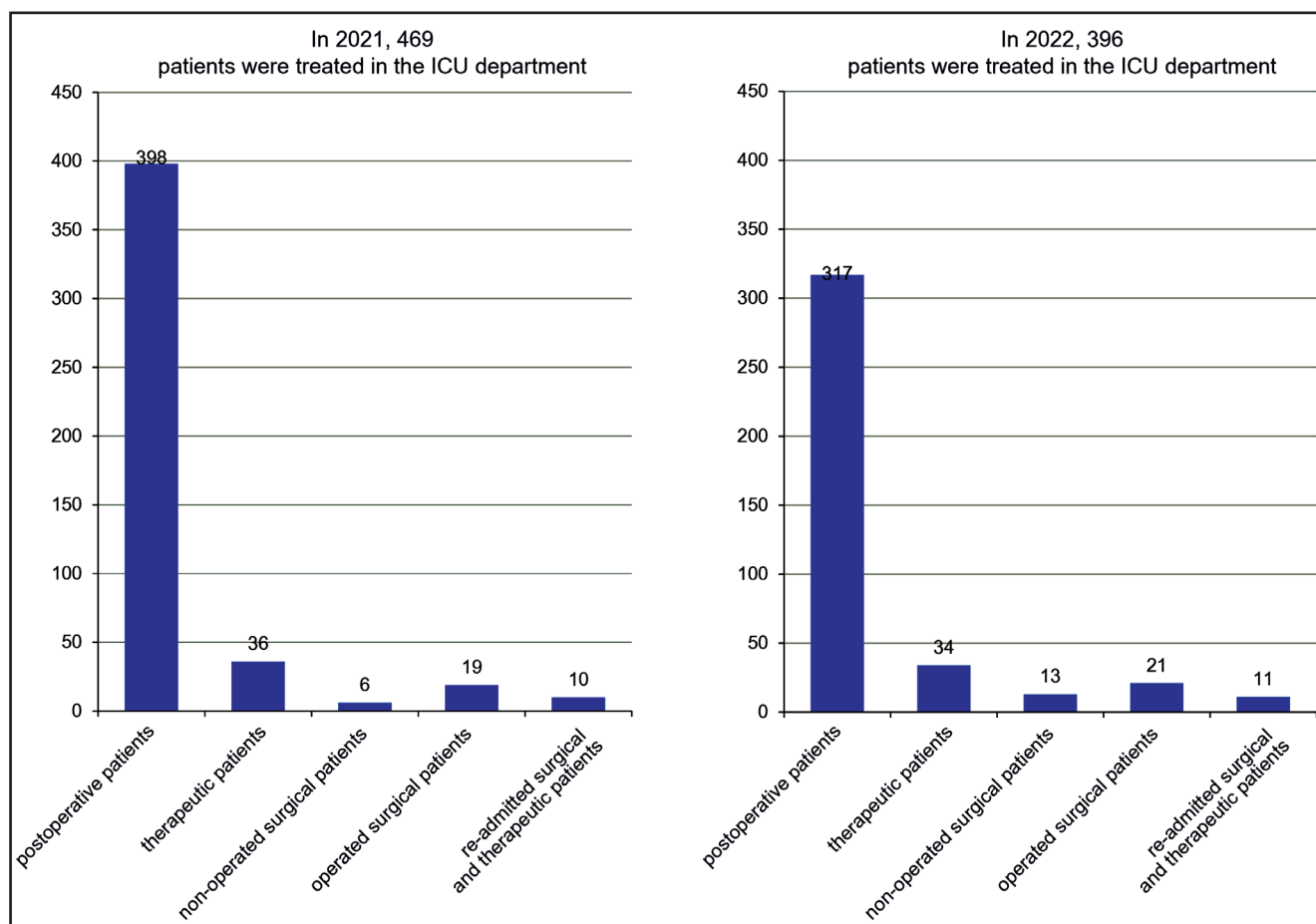


Figure 2 - The structure of patients who received intensive care in the ICU department of KazIOR, JSC in 2021-2022

Therapeutic patients receiving radiological or chemotherapeutic treatment were admitted for intensive care due to the development of complications of specialized treatment or acute emergency conditions that arose during treatment. Their number remained nearly unchanged during the study period.

The main reason for the admittance of non-operated surgical patients was a severe course of the underlying disease requiring intensive care in the ICU department. Their number increased in 2022 owing to cases of planned preoperative preparation.

Operated surgical patients mean those who received surgical treatment according to the volume of surgical intervention and general condition and were treated in the post-anesthesia care unit due to acute postoperative conditions associated with surgery and/or comorbidities. Their number also remained nearly unchanged in 2022.

Patients re-admitted to the ICU department had received intensive care before and were re-admitted to

the ICU department during current hospitalization. The number of re-admitted patients amounted to 2.1% in 2021 and 2.7% in 2022. The main reason for the readmission of operated patients was the complication of surgical treatment (bleeding, failure of anastomoses, etc.). In therapeutic patients, a return for intensive care was often due to a progression of the underlying disease against the background of specialized treatment. Notably, readmission to the ICU department was associated with poorer outcomes, longer hospital stays, and higher treatment costs, which is also a global problem. According to Ponzoni et al. [12], Gudanis and Lebedinsky [13], the average number of patients re-admitted to the ICU department accounts for about 10% of the total number of patients treated in the ICU department.

Table 3 shows the age structure of patients in the ICU department of KazIOR, JSC. Elderly and senile patients account for more than 40% of all ICU patients. The number of patients of these ages increased in 2022.

**Table 3 – Age groups of patients of the ICU department of KazIOR, JSC in 2021-2022**

Years	Age (abs.,%)				
	Children	Below 40 years	40 to 60 years	60 to 70 years	>70 years
2021	15 (0.65)	404 (15.3%)	1135 (43%)	772 (29%)	310 (11.8%)
2022	3 (0.1%)	467 (16.2%)	1179 (40.9%)	839 (29.1%)	393 (13.6%)

The most common comorbidity were cardiovascular diseases (40% of cases). This trend is observed throughout the world. It can lead to increased mortality, longer stay in a UCU department, and often requires consult-

ing on anesthesia not only at all stages of the perioperative period but also at the outpatient level [14, 15]. Table 4 provides the structure of comorbidities in oncological patients.

**Table 4 – The structure of comorbidities in patients of the ICU department of KazIOR, JSC in 2021-2022**

Years	Pathology (abs., %)						
	IHD	Stage 1-2 hypertension	Stage 3-4 hypertension	Heart arrhythmia	Diabetes mellitus	Respirator diseases	Other
2021	196 (7.4%)	590 (22.3%)	252 (9.5%)	17 (0.6%)	156 (5.9%)	103 (3.9%)	343 (13.0%)
2022	238 (8.2%)	556 (19.2%)	270 (9.3%)	29 (1.0%)	174 (6.0%)	134 (4.6%)	546 (18.9%)

In 2021-2022, the mortality in the ICU department amounted to 42 cases, including 22 cases of postoperative mortality. The latter remained nearly at the same level, while hospital and total mortality slightly in-

creased over time. In 2021, some fatal cases were due to the coronavirus infection. Increased mortality in 2022 was due to complications associated with the underlying pathology (Table 5).

**Table 5 – All types of mortality in the ICU department of KazIOR, JSC in 2021-2022**

Mortality	2021		2022	
Postoperative	10 (0.38%)		12 (0.41%)	
	5 – admitted to the ICU after surgery	5 – admitted to the ICU from a specialized department	4 – admitted to the ICU after surgery	8 – admitted to the ICU from a specialized department
Hospital	18 (3.8%)		24 (6.0%)	
Total*	18 (0.67%)		24 (0.81%)	

Note: the percentage was calculated from the total number of patients in the post-anesthesia care unit (2232 in 2021 and 2564 in 2022) and the ICU department (469 in 2021 and 396 in 2022)

**Discussion:** Anesthesiology, resuscitation, and intensive care are among the most complex and key areas of healthcare. Despite the latest advancements in treating malignancies, cancer patients remain vulnerable and are at high risk of developing conditions that require intensive care. Globally, cancer patients make up to 20% of all ICU patients [16]. Timely diagnosis and hospitalization in the ICU help treat and prevent life-threatening conditions or complications. At that, the number of patients admitted to ICU is growing worldwide. Thus, more than 200,000 adults and children in the UK are admitted to ICU departments every year [17]. The cost of treatment is also growing: i.e., in the US, the cost of treatment increased by 92% from 2000 to 2010 [18]. The increased burden on cancer ICU departments in the world and in Kazakhstan is due to a general increase in the number of cancer patients and a growing share of patients with severe comorbidities and senile age [19]. Besides, the development of anesthesiology has expanded the functional boundaries of operability (today, we can offer safe anesthesia to patients who, 20 years ago, were denied anes-

thesia for surgery), as well as the volume and traumatism of surgical interventions in oncology. All this requires modern and expensive technical and medicinal support, but also a high level of professional training of medical personnel. In recent years, the professional skills of ICU doctors have been expanding in the world: transesophageal echocardiography, ultrasound diagnostics, and endoscopic procedures have become a standard in the training of anesthesiologists-resuscitators [20]. The same trend is observed in Kazakhstan. Training in modern skills is included in the "Roadmap for Improving the Anesthetic and Resuscitation Service in the Republic of Kazakhstan in 2022-2023" [21].

**Conclusion:** The ICU department activity is a complex multi-level treatment process implemented by highly qualified medical personnel and requires advanced technologies and knowledge. The effectiveness of treatment and safety of patients at all stages of the treatment process is impossible without clear coordination of the ICU department activities and periodic analysis of work with subsequent planning of relevant measures to provide

even better specialized care for cancer patients. The reporting documentation analysis for 2021-2022 showed that the number of anesthesia performed and the total number of patients treated in the ICU department increases annually. This factor increases the burden on the ICU department and requires further improvement and modernization of the anesthesiology and intensive care service in oncology.

### References:

1. Wikipedia. Bjørn Aage Ibsen. [https://en.wikipedia.org/wiki/Bj%C3%B8rn\\_Aage\\_Ibsen](https://en.wikipedia.org/wiki/Bj%C3%B8rn_Aage_Ibsen). 23.03.2023.
2. Duška F., Al-Haddad M., Cecconi M. Intensive Care Fundamentals. Practically Oriented Essential Knowledge for Newcomers to ICUs. – Springer Cham, 2023. – ISBN: 978-3-031-21991-7. <https://doi.org/10.1007/978-3-031-21991-7>
3. Lanier W.L. A Three-Decade Perspective on Anesthesia Safety // *Am. Surgeon.* – 2006. – Vol. 72(11). – P. 985-989. <https://doi.org/10.1177/000313480607201101>
4. Gebbie D. Anaesthesia and death // *Can. J. Anaest.* – 1966. – Vol. 13(4). – P.390-396. <https://doi.org/10.1007/BF03002181>
5. Приказ Министра здравоохранения Республики Казахстан. Об утверждении Стандарта организации оказания анестезиологической и реаниматологической помощи в Республике Казахстан: от 16 октября 2017 года, № 763 [Order of the Minister of Health of the Republic of Kazakhstan. On approval of the Standard for Organizing the Provision of Anesthetic and Resuscitation Care in the Republic of Kazakhstan: appr. October 16, 2017, No. 763 (in Russ.)]. <https://adilet.zan.kz/rus/docs/V1700015953/history>
6. Приказ Министра здравоохранения Республики Казахстан. Об утверждении минимальных стандартов основанных организации здравоохранения медицинскими изделиями: от 29 октября 2020 года, № ҚР ДСМ-167/2020 [Order of the Minister of Health of the Republic of Kazakhstan. On approval of Minimum Standards for Equipping Healthcare Organizations with Medical Devices: appr. October 29, 2020, № KR DSM-167/2020 (in Russ.)]. <https://adilet.zan.kz/rus/docs/V2000021560>
7. Hasselager R.P., Hallas J., Gögenur I. Inhalation anaesthesia compared with total intravenous anaesthesia and postoperative complications in colorectal cancer surgery: an observational registry-based study // *BJA.* – 2022. – Vol.129 (3). – P. 416-426. <https://doi.org/10.1016/j.bja.2022.03.019>
8. Hays S.R. Inhalation anesthetic agents: Clinical effects and uses. [https://www.uptodate.com/contents/inhalation-anesthetic-agents-clinical-effects-and-uses?source=history\\_widget](https://www.uptodate.com/contents/inhalation-anesthetic-agents-clinical-effects-and-uses?source=history_widget). 23.03.2023
9. Said F.A., Kenemo B., Buname G., Kituuka O., Washington L., Chalya P.L. Patterns of immediate post-anesthetic complications and associated factors among patients undergoing major surgery at Bugando Medical Centre, Mwanza, Tanzania // *Tanzania J. Health Res.* – 2022. – Vol.23(1). – P. 1-13. <https://doi.org/10.4314/thrb.v23i1>
10. Nanavati A.J., Prabhakar S. Fast-track surgery: Toward comprehensive perioperative care. // *Anesth., Essays & Res.* – 2014. – Vol. 8(2). – P. 127-133. <https://doi.org/10.4103/0259-1162.134474>
11. Altman A.D., Helpman L., McGee J., Samouëlian V., Auclair M.H., Brar H., Nelson G.S. Society of Gynecologic Oncology of Canada's Communities of Practice in ERAS and Venous Thromboembolism. Enhanced recovery after surgery: implementing a new standard of surgical care // *Can. Med. Ass. J.* – 2019. – Vol. 191(17). – P. 469-475. <https://doi.org/10.1503/cmaj.180635>
12. Ponzoni C.R., Corrêa T.D., Filho R.R., Serpa Neto A., Assunção M.S.C., Pardini A., Schettino G.P. Readmission to the Intensive Care Unit: Incidence, Risk Factors, Resource Use, and Outcomes. A Retrospective Cohort Study // *Ann. Am. Thorac. Soc.* – 2017. – Vol. 14(8). – P. 1312-1319. <https://doi.org/10.1513/AnnalsATS.201611-851OC>
13. Gudanis O.A., Lebedinskij K.M. Povtornyj perevod v otdelenie reanimacii // *Anesteziologiya i reanimatologiya.* – 2018. – T. 4. – S. 15-21 [Gudanis O.A., Lebedinsky K.M. Re-transfer to ICU department // *Anesthesiology and resuscitation.* – 2018. – Vol. 4. – P. 15-21 (in Russ.)]. <https://doi.org/10.17116/anaesthesiology201804115>
14. Halvorsen S., Mehilli J., Cassese S., Hall T.S., Abdelhamid M., Barbato E., De Hert S., de Laval I., Geisler T., Hinterbuchner L., Ibanez B., Lenarczyk R., Mansmann U.R., McCreavy P., Mueller C., Muneretto C., Niessner A., Potpara T.S., Ristić A., Sade L.E., Schirmer H., Schüpke S., Sillesen H., Skulstad H., Torracca L., Tutarel O., Van Der Meer P., Wojakowski W., Zacharowski K.; ESC Scientific Document Group. 2022 ESC Guidelines on cardiovascular assessment and management of patients undergoing non-cardiac surgery // *Eur. Heart J.* – 2022. – Vol. 43(39). – P.3826-3924. <https://doi.org/10.1093/eurheartj/ehac270>
15. Jackson M. B., Huang R., Kaplan E., Mookherjee S. The Perioperative Medicine Consult Handbook. – 3rd ed. – Springer, 2020. <https://doi.org/10.1007/978-3-030-19704-9>
16. Pastores S.M. Critical Care and Oncology // *Critical care clinics.* – 2021. – Vol.37 (1). – P. XV-XVI. <https://doi.org/10.1016/j.ccc.2020.10.001>
17. Intensive care national audit and research centre (ICNARC) // [www.icnarc.org/](http://www.icnarc.org/). 14.03.2023.
18. Halpern N.A., Goldman D.A., Tan K.S., Pastores S.M. Trends in Critical Care Beds and Use Among Population Groups and Medicare and Medicaid Beneficiaries in the United States: 2000-2010 // *Critical care med.* – 2016. – Vol. 44(8). – P.1490-1499. <https://doi.org/10.1097/CCM.0000000000001722>
19. Kumar V., Gupta N., Mishra S. Onco-critical Care. An Evidence-based Approach. – Springer, 2022. <https://doi.org/10.1007/978-981-16-9929-0>
20. Miller's Anesthesia / eds. M. Gropper, L. Eriksson, L. Fleisher, J. Wiener-Kronish, N. Cohen, K. Leslie. – 2-vol. set. – 9th ed. – Elsevier, 2019. – eBook ISBN: 9780323612647.
21. Приказ Министра здравоохранения Республики Казахстан. Об утверждении Дорожной карты по совершенствованию службы анестезиологии и реаниматологии в Республике Казахстан на 2022-2023 годы: от 7 декабря 2021 года, № 777 [Order of the Minister of Health of the Republic of Kazakhstan. On approval of the Roadmap for Improving the Anesthetic and Resuscitation Service in the Republic of Kazakhstan in 2022-2023: appr. December 7, 2021, No. 777 (in Russ.)] // [https://online.zakon.kz/Document/?doc\\_id=31947668&pos=4;-106#pos=4;-106](https://online.zakon.kz/Document/?doc_id=31947668&pos=4;-106#pos=4;-106)

### АНДАТПА

## «ҚазОРФЗИ» АҚ АНЕСТЕЗИОЛОГИЯ, РЕАНИМАЦИЯ ЖӘНЕ ҚАРҚЫНДЫ ТЕРАПИЯ БӨЛІМШЕСІНІҢ 2021-2022 жылдарға арналған қызметін талдау

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**Өзектілігі:** «Қазақ онкология және радиология ғылыми-зерттеу институты» акционерлік қоғамының («ҚазОРФЗИ» АҚ) Анестезиология, реанимация және қарқынды терапия бөлімшесі (АРҚТБ) – онкологиялық науқастарға көмек көрсетудің ұйымдастырылған жүйесі, онкохирургиялық операциялардың барлық түрлерін анестезиологиялық қамтамасыз етуден, операциядан кейінгі қарқынды терапиядан, онкологиялық аурулардың, рентгенологиялық және химиотерапиялық бейіндегі пациенттердің өміріне қауіп төндіретін жай-күйлерді дамыту кезіндегі қарқынды терапиядан тұрады. Сапалы көмек дәрігерлік және мейірбикелік кадрларды кәсіби даярлаудың тиісті деңгейінде, тиімділікті қамтамасыз ету және мониторинг технологияларымен, дәрі-дәрмектік заттармен және медициналық мақсаттағы бұйымдармен жеткілікті қамтамасыз етілгенде ғана мүмкін болады.

**Зерттеудің мақсаты** – «ҚазОРФЗИ» АҚ онкологиялық пациенттеріне мамандандырылған анестезиологиялық және реанимациялық көмек көрсету сапасын одан әрі жақсарту мақсатында 2021-2022 жылдарға арналған АРҚТБ қызметіне талдау жасау.

**Әдістері:** 2021 және 2022 жылдардағы АРҚТБ клиникалық қызметінің есептік құжаттамасын талдау.

**Нәтижелері:** 2021-2022 жылдар кезінде 5517 анестезия жасалды, бұл ретте 2022 жылғы анестезия саны 9,2%-ға ұлғайды, жүргізілген анестезия түрлерінің құрылымы өзгеріссіз қалады. Анестезиологиялық асқынулар 0,27% құрады, ал анестезиологиялық өлім-жітім болған жоқ. Операциядан кейінгі қарқынды терапияға түскен пациенттердің саны 2022 жылғы 6%-ға төмендеді. АРҚТБ-не қайта қабылданған пациенттердің саны 2021 жылғы 2,1% және 2022 жылғы 2,7% құрады. Егде жастағы және кәрілік жастағы пациенттер-

дің үлес салмағы АРҚТБ пациенттерінің жалпы санының 40%-дан астамын құрады. 40% жағдайда пациенттер жүрек-қан тамырлары жүйесінің созылмалы ауруларынан зардап шегеді. Талдау жасалған кезеңде АРҚТБ-дегі өлім-жітім 42 жағдайды құрады, олардың ішінде операциядан кейінгі – 25 жағдай, операциядан кейінгі өлім-жітім шамамен бірдей деңгейде қалды, ал ауруханалық және жалпы өлім-жітім динамикасында аздап өсім байқалды.

**Қорытынды:** 2021-2022 жылдарға арналған есепті құжаттаманы талдаған кезде, жүргізілген анестезиялардың саны және АРҚТБ-де емделген пациенттердің жалпы саны жыл сайын артып келе жатқаны айқын, бұл онкологиядағы анестезиология және қарқынды терапия қызметін одан әрі жетілдіруді және жаңғыртуды талап етеді.

**Түйінді сөздер:** АРҚТБ, қарқынды терапия, анестезиологиялық қамтамасыз ету, анестезиологиялық асқынулар, анестезиологиялық өлім-жітім.

## АННОТАЦИЯ

### АНАЛИЗ ДЕЯТЕЛЬНОСТИ ОТДЕЛЕНИЯ АНЕСТЕЗИОЛОГИИ, РЕАНИМАЦИИ И ИНТЕНСИВНОЙ ТЕРАПИИ АО «КазНИИОиР» за 2021-2022 гг.

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**Актуальность:** Отделение анестезиологии, реанимации и интенсивной терапии (ОАРИТ) Акционерного Общества «Казакский научно-исследовательский институт онкологии и радиологии» (АО «КазНИИОиР») – это организованная система оказания помощи онкологическим пациентам, заключающаяся в анестезиологическом обеспечении всех видов онкохирургических операций, послеоперационной интенсивной терапии, интенсивной терапии при развитии жизнеугрожающих состояний у онкологических пациентов радиологического и химиотерапевтического профиля. Качественное оказание помощи возможно лишь при соответствующем уровне профессиональной подготовки врачебных и сестринских кадров, достаточном обеспечении технологиями жизнеобеспечения и мониторинга, лекарственными средствами и изделиями медицинского назначения.

**Цель исследования** – анализ деятельности ОАРИТ за 2021-2022 гг. для дальнейшего улучшения качества оказания специализированной анестезиологической и реанимационной помощи онкологическим пациентам АО «КазНИИОиР».

**Методы:** Был проведен анализ отчетной документации по клинической деятельности ОАРИТ АО «КазНИИОиР» за 2021 и 2022 гг.

**Результаты:** За период 2021-2022 гг. выполнено 5517 анестезий, при этом количество анестезий в 2022 г. увеличилось на 9,2%, структура проведенных видов анестезий остается без изменений. Анестезиологические осложнения составили 0,27%, при этом анестезиологической летальности не было. Количество пациентов, поступивших на послеоперационную интенсивную терапию в 2022 г., снизилось на 6%. Количество повторно поступивших пациентов в ОАРИТ составило 2,1% в 2021 г. и 2,7% в 2022 г. Удельный вес пациентов пожилого и старческого возраста составил более 40% от общего числа пациентов ОАРИТ. В 40% случаях пациенты страдали хроническими заболеваниями сердечно-сосудистой системы. Летальность в ОАРИТ за анализируемый период составила 42 случая, из них послеоперационная – 25 случаев, при этом послеоперационная летальность остается примерно на одном уровне, а госпитальная и общая летальность в динамике немного увеличились.

**Заключение:** При анализе отчетной документации за 2021-2022 гг. становится очевидным, что количество проведенных анестезий и общего количества пролеченных пациентов в ОАРИТ ежегодно увеличивается, что требует дальнейшего совершенствования и модернизации службы анестезиологии и интенсивной терапии в онкологии.

**Ключевые слова:** Отделение анестезиологии, реанимации и интенсивной терапии (ОАРИТ), интенсивная терапия, анестезиологическое обеспечение, анестезиологические осложнения, анестезиологическая летальность.

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