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Good fame on earth – in memory of Zhanalyk Niyazovich Abdrakhmanov

The article is devoted to the memory of Zhanalyk Niyazovich Abdrakhmanov, an outstanding Kazakhstani medical scientist, oncologist, Doctor of Medical Sciences, professor, Academician of the National Academy of Sciences. Together with his colleagues, Prof. Abdrakhmanov paid much attention to the study of drugs that can protect the body from the damaging effects of radiation, contributed to the approbation of new drugs, involved the scientists of the Kazakh Institute of Oncology and Radiology in the study of the latest results of international research. He supervised the preparation and defense of 23 doctoral and 27 candidate theses. He authored 223 scientific works, including 12 monographs, four textbooks for medical students, and 11 inventions.

Keywords: Outstanding scientist, radiation dose fractionation, new drugs.



Figure 1 – Zh.N. Abdrakhmanov, 1975

One of the most outstanding Kazakh medical scientists, oncologist, Doctor of Medical Sciences, professor, Academician of the National Academy of Sciences Zhanalyk Niyazovich Abdrakhmanov could turn 85 years old by the 60th anniversary of the existence of the Kazakh Institute of Oncology and Radiology.

Zhanalyk Niyazovich Abdrakhmanov was born on November 7, 1935, in the village of Kentogay, Karmakshy district, Kyzylorda region.

In 1959, he graduated from the Asfendiyarov National Medical Institute. In 1959-1964, he worked as a doctor in the district hospital of the Karmakshy district of the Kyzylorda region. In 1964-1975, he worked as a senior researcher and then as the head of the clinical radiology department at the Kazakh Institute of Oncology and Radiology (KazIOR). Since 1975, he was an Associate Professor and then the Head of Chair at Alma-Ata Medical Institute. From 1990 to 2001, he was Director of KazIOR.

Zh.N. Abdrakhmanov began his scientific activity in 1962 with the publication of materials on the still new discipline at that time - gamma-ray teletherapy of malignant tumors. Since that time, all his activities have been devoted to studying fundamentally new approaches to radiation therapy of cancer diseases and the human body's reaction to the

action of ionizing radiation. His scientific work was summarized in his doctoral thesis, where he proposed new ways to normalize radiation-induced blood changes using drugs containing trace substances.

In those and following years, Zh. N. Abdrakhmanov and his colleagues paid much attention to studying drugs that could protect the body from the damaging effects of radiation. Those works, performed in secrecy, were of defense importance. His scientific developments made it possible to create new schemes for dynamic dose fractionation in radiation therapy, to substantiate and prove their advantages. They have become widely used and have significantly increased the survival rate of inoperable patients with esophageal cancer. The tested dose distribution schemes for radiation therapy served as the basis for his doctoral dissertation in 1989. That technique delivered the most effective immediate and long-term results compared with the other seven investigated radiation dose fraction methods.

The scientific research of Zh.N. Abdrakhmanov on the clinical use of chemical radiosensitizers, ensuring the targeted increase of tumor sensitivity to ionizing radiation, was of the utmost importance for public healthcare. The development of a fundamentally new way of their application - the injection of radiosensitizers (metronidazole, sanazole, etc.) directly into the tumor was the main issue. That allowed achieving a five-year survival with stage III cervical cancer of 75-80% versus 45-50% with combined radiation therapy.

For several years, Zh.N. Abdrakhmanov was an associate professor and then the Head of the Radiation Diagnostics and Radiation Therapy Chair at Asfendiyarov Kazakh National Medical University, while working as the Head of the Intracavitary Gamma Therapy Department.

Zhanalyk Niyazovich studied under Academician S. B. Balmukhanov, who supervised the defense of his candidate thesis on the topic, "The content of some trace elements (cobalt, nickel, copper, and iron) in the blood of cancer patients during radiation therapy" in 1968, and his doctoral thesis on the topic, "Comparative evaluation of various methods of radiation dose fractionation for esophageal cancer" in 1989.

The scientist demonstrated superior organizational skills when appointed as Director of KazIOR in 1990. He hold the

position till 2001, being also the Head of the Radiology and Roentgenology Department of the Almaty State Medical Institute. Those years coincided with the period of restructuring, a decrease in funding, and a reorganization of the regions of the republic, which affected regional oncologic dispensaries: there was a reduction in 3 dispensaries, oncology departments at city hospitals in Temirtau, Petropavlovsk, Arkalyk, the number of oncology rooms decreased by 52 from 1993 to 1997. The number of examination rooms decreased by 72.7%, the number of oncological beds in the country decreased by 720, there was a lack of staffing with oncologists and radiologists. The quality indicators of the oncological service have significantly decreased. Despite insufficient funding, Zh.N. Abdrakhmanov managed to consolidate the team and preserve all the scientific activity directions at the Institute. In May 1994, he was elected a Corresponding Member of the National Academy of Sciences of the Republic of Kazakhstan (RK) in Medicine. In November 2002, he became a full member of the NAS RK.

It should be noted that the nineties were difficult for both Kazakhstan and other republics of the former Soviet Union. Each of them introduced its currency, performed reforms in the economic and social spheres, overcoming the consequences of the collapse of the USSR. Zhanalyk Niyazovich tried to keep scientific contacts with fellow oncologists from the Soviet republics, especially with leading scientists from Moscow and St. Petersburg.

Zh.N. Abdrakhmanov supported close cooperation with fellow oncologists from the former Soviet countries, Europe, Asia, the USA, and Canada to keep up with modern technologies in diagnostics and treatment of oncological diseases.

Zhanalyk Niyazovich was a supporter of the introduction of new high-quality drugs and technologies. The Institute was always glad and ready to cooperate with well-known scientists, manufacturers of medicines, medical devices, and medical equipment. In the early '90s, there was an acute problem of providing medicines, medical products, and medical equipment in Kazakhstan. Previously, Moscow authorities supervised the procurement of those items; now, each country of the former USSR was to act independently. Foreign companies and distributors offering medical devices, medical equipment, drugs used in chemotherapy protocols for oncological diseases have opened their representative offices in the RK. Zh.N. Abdrakhmanov contributed to testing new drugs and involved the Institute's scientists in studying the latest scientific publications and international research results. The Institute staff reported their research results at seminars and conferences.

In total, Zh.N. Abdrakhmanov supervised the preparation and defense of 23 doctoral and 27 candidate's theses. He published 223 scientific works, including 12 monographs, four textbooks for medical students. He authored 11 inventions. In 1994, Zhanalyk Niyazovich was elected a corresponding member of the NAS RK. He was involved in many social activities, being the chairman of the Republican Society of Oncologists, the President of the Anticancer Foundation of the RK, the Vice-President of the Committee of Doctors of Kazakhstan for the Prevention of Nuclear War, a member of the editorial board of the "Health of Kazakhstan" journal and the Member of the Board of the International Council "Almaty (Kazakhstan) - Rennes (France)."

His hard work, scientific and social activities were acknowledged by the title "Honored Scientist of the RK." He

was awarded the badge "Excellence in Healthcare of the RK" and many diplomas of the RK Ministry of Healthcare. Academician Zh.N. Abdrakhmanov was highly responsible and demanding to himself, sensitive and attentive to people, possessed exceptional modesty and high principles. Despite his regalia, Zhanalyk Niyazovich was a very friendly person, always ready to help colleagues, family, and friends.

The family members of Zhanalyk Niyazovich are closely related to medicine. His wife, Asiya Kaztaevna, the Candidate of Medical Sciences, has worked for more than 40 years at KazIOR in the Experimental Tumor Chemotherapy Laboratory. The Laboratory focused on the search and experimental study of plant and synthetic origin anticancer drugs, their pharmacodynamics. They also studied the occurrence of tumor resistance to chemotherapeutic drugs and the ways to eliminate it, the somatic hybridization of cancerous and normal cells resistant to chemotherapy, the methods of cultivating human cancerous tissues of various localizations to determine the sensitivity to chemotherapy drugs, and searched for radio-modifying agents. The study of the effect of the body's daily biological rhythms on the tumor allowed determining the periods of increased radiochemical sensitivity of the tumor during the day.

In 1987, the Laboratory of Biomedical Models and Tumor Genetics was established. They explored the clonal-selective concept of tumor growth and developed a clonal-structural approach to investigating the fundamental properties of malignant tumors such as hereditary heterogeneity, radio- and chemoresistance, metastasis.

Zhanalyk Niyazovich and Asiya Kaztaevna (Figure 2) brought up wonderful children – Malik and Aliya, who followed their parents' path and received higher medical education.



Figure 2 - Zh.N. Abdrakhmanov with his wife, 2003

Malik Zhanalykovich Abdrakhmanov is the Candidate of Medical Sciences, anesthesiologist-resuscitator. In the 1990s, he headed the Kazakhstani office of a large Swiss company, producer of a wide range of high-quality drugs. M.Zh. Abdrakhmanov did a lot to introduce new medical technologies, protocols, and treatment standards while combining his daily business with the medical practice at a maternity hospital operating room and intensive care unit. Today, Malik Zhanalykovich heads the Pharmacovigilance, Monitoring, Safety, Efficiency, and Quality of Medical Devices Department of the National Center for Expertise of Med-

icines and Medical Devices (NCEDM). Colleagues describe him as a top-class anesthesiologist and resuscitation specialist. He took part in many operations that saved the lives of many mothers and newborns.

Aliya Zhanalykovna Abdrakhmanova is the Head of the Breast Tumor Center of KazIOR, Doctor of Medical Sciences, Professor. She is a clinician, surgeon, scientist, mentor of the younger generation of doctors, who has brought up more than one generation of oncologists who work in all regions of the republic (Figure 3).



Figure 3 - Asiya Kaztaevna Edygenova with her daughter Aliya Zhanalykovna, 2013

His students, colleagues, grateful patients, relatives, and friends remember Zhanalyk Niyazovich Abdrakhmanov, a remarkable scientist, oncologist, and public figure. In the Kyzyl-Orda region, they are proud of their fellow countryman and remember him. In 2012, one of the central streets of Kyzyl-Orda next to the diagnostic center was named in honor of Zh.N. Abdrakhmanov. A memorial tablet with his image reminds the city residents and guests about a regular country guy who became a famous doctor, scientist, oncologist (Figures 4-10).



Figure 4 – Prof. N.A. Azhigaliev with Prof. Zh.N. Abdrakhmanov, 1969



Figure 5 – Prof. Scott (England) with Prof. Zh.N. Abdrakhmanov, 1987



Figure 6 – Prof. N.I. Kolychev, Laureate of the USSR State Prize, with Prof. Zh.N. Abdrakhmanov



Figure 7 – Prof. A.M. Garin with Prof. Zh.N. Abdrakhmanov, 1998



Figure 8 – Prof. Zh.N. Abdrakhmanov with colleagues from India and Japan at an international conference, 1999



Figure 9 – Prof. Zh.N. Abdrakhmanov and Prof. S. B. Balmukhanov with colleagues from Japan, 1996



Figure 10 – KazIOR Scientists – D.K. Savkhatov, Zh.S. Mustafin, Zh.N. Abdrakhmanov, V.I. Fillipenko, T.Zh. Turmukhanov, and A.A. Dzhardemov, 2000

References:

1. Abisatov Kh.A. Клиническая онкология [Clinical oncology]. – Almaty: Arys Publishing House, 2007.
2. Abdrakhmanov Zh.N., Karakulov RK, Sadykov S. Радиобиологическое обоснование применения радиомодифицирующих агентов при лучевой терапии злокачественных опухолей

[Radiobiological substantiation of using radio-modifying agents in radiation therapy of malignant tumors]. – Almaty: Alem Publishing House, 2000.

3. Sadykov S., Abdrakhmanov A. Zh, Abdrakhmanova A. Zh. Clinical radiology. - Almaty: Evero Publishing House, 2016.
4. Documents from the Abdrakhmanovs' family archive.

ТҰЖЫРЫМ

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**Жер бетінде ізгі ісімен есте қалған
Жаңалық Ниязұлы Әбдірахмановты
еске алу**

Мақала Қазақстанның беделді медицина ғалымдарының бірі, онколог, медицина ғылымдарының докторы, профессор, Ұлттық Ғылым Академиясының академигі, Жаңалық Ниязұлы Әбдірахмановқа арналған. Ж.Н. Әбдірахманов әріптестерімен бірге ағзаны радиацияның зақымдаушы әсерінен қорғауға қабілетті дәрі-дәрмектерді зерттеуге көп көңіл бөлді, жаңа препараттардың апробациясына ықпал етті, ҚазОЖРҒЗИ ғалымдарын халықаралық зерттеулердің жаңа нәтижелерін зерттеуге тартты.

Ж.Н. Әбдірахмановтың ғылыми жетекшілігімен 23 докторлық және 27 кандидаттық диссертация қорғалды. Ол 223 ғылыми жұмыс жариялады, оның ішінде 12 монография мен медициналық жоғары оқу орындарының студенттеріне арналған 4 оқу құралы бар. Ол 11 өнертабыстың авторы.

Түйінді сөздер: Көрнекті ғалым, радиация мөлшерін бөлу, жаңа дәрі-дәрмектер.

АННОТАЦИЯ

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**Добрый след на земле –
Памяти Жаналыка Ниязовича
Абдрахманова!**

Статья посвящена одному из авторитетнейших казахстанских ученых медиков, онкологу, доктору медицинских наук, профессору, Академику Национальной Академии Наук Жаналыку Ниязовичу Абдрахманову. Ж.Н. Абдрахманов вместе с коллегами уделял много внимания изучению препаратов, способных защитить организм от поражающего действия радиации, способствовал апробации новых препаратов, вовлекал ученых института в изучение новейших результатов международных исследований. Под научным руководством Абдрахманова Ж.Н. были подготовлены и защищены 23 докторские и 27 кандидатских диссертаций. Им опубликовано 223 научные работы, в том числе 12 монографий, 4 учебных пособия для студентов медицинских вузов. Он автор 11 изобретений.

Ключевые слова: Выдающийся ученый, фракционирование дозы радиации, новые лекарства.