

70TH ANNIVERSARY OF THE LVIV SCIENTIFIC SCHOOL OF ONCOLOGY

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Contemporary development of scientific thought is fostered not by separate people but is a purposeful activity of a group of like-minded people armed with progressive ideas and modern technical equipment. Such schools appeared and work actively in the majority of research and educational establishments, clinics, and universities. The Lviv school established in 1945 by Professor H.P. Kovtunovych and developed by Professor A.I. Hnatyshak and his disciples can serve as an example of a successful school of oncology that continues its activity and yields scientific results. This school appeared not out of the thin air. Medieval Lviv could boast of the first university on the territory of the present-day Ukraine. Many discoveries and endeavors that made a beneficial impact on the development of medicine in Eastern Europe were made in this city. For historical reasons, the city of Lviv used to belong to different state formations (Austria-Hungary, Poland, the USSR; now it is a part of Ukraine), which could not but reflect on the staffing of doctor-researchers. This process acquired a special intensity in 1939–1945 when the research staff of the university changed substantially. Then, in 1945, H.P. Kovtunovych, the disciple of the prominent oncologist N.N. Petrov, came to Lviv and brought the ideas of St.-Petersburg oncology to the Lviv ground. The Lviv school was influenced by the two times Nobel Prize winner Marie Skłodowska Curie, who facilitated the initiation of oncological radiology in Lviv. The article contains data on research done by the disciples of Professors H.P. Kovtunovych and A.I. Hnatyshak. The first ever teaching chair of oncology in the USSR was founded in Lviv (1966), as well as the first Ukrainian hospice — an institution for palliative care for the oncological patients. The Lviv oncology center is one of the biggest and best-equipped oncology centers in Ukraine. An organic combination of theory and clinical practice has always been the guiding principle of the Lviv school of oncology. Presently, the Lviv school of oncology unites six doctors of sciences, a large collective of educators and researchers, as well as practitioners of the center of oncology. The school maintains close scientific and practical ties with oncologists of Ukraine as well as with leading oncological centers of Europe and America.

Globally, science is developed not as achievements of separate people, but as a purposeful activity of a group of like-minded people under the guidance of the leaders able to generate original ideas and manage their implementation.

What concerns oncology, and the situation with it in Lviv, the development of the scientific schools is intertwined with historical events, as for two generations our Institute (faculty, university) passed from Austro-Hungarian Empire, inter-war Poland, a number of occupational regimes, and the USSR to its current activity in Ukraine, which is being built and reformed.

Such situation caused an almost complete change of the staff in the period of 1939 to 1945, and appearance of a whole cohort of researchers from the so-called Great Ukraine and other republics, which resulted in a break of continuity of the research process. The history of research and practice in oncology started in Lviv long before the official foundation of the department of the same name and establishment of the scientific school of oncology *de facto* and *de jure*. We should mention that for many centuries the history of the Ukrainian science in general and medicine in particular was connected with the ancient Lviv. It was here that in 1661, the first University on the territory of our state was opened, and in 1784, as its part, a medical faculty was started, which was later transformed into the medical institute (in 1939). It was in the 19th century Lviv that Lukasevych, a pharmacist, invented the petrol lamp, which opened the era of artificial lighting during surgeries. Rydygier,

a famous Austrian surgeon, one of the pioneers of stomach surgery (1897), worked in Lviv; successful removal of tumors of female genital organs were done in K. Bocheński's clinic (1921); lung resections were done in T. Ostrowski's clinic.

The history of the Lviv school of oncology is closely connected with two internationally renowned names. Back in 1929, Marie Skłodowska Curie, the two times Nobel Prize winner, presented to the branch of the Polish Cancer Institute working in Lviv 80 mg of radium, which she discovered. It was a truly royal present. During the World War II, that radium was hidden and started being used for the benefit of people after the end of the war.

In 1945, Professor Havrylo Porfentiyovych Kovtunovych, a disciple of one of the founders of the clinical oncology in the world and a prominent Russian academician N.N. Petrov, came to Lviv, where the majority of professors of the medical faculty were eliminated. He headed the department of surgical propaedeutics, but, understandably, most important areas of the department's activity included the research in clinical oncology. Professor H.P. Kovtunovych carried on the traditions of his Teacher N.N. Petrov that consisted in an integral combination of clinical practice and deep understanding of theoretical oncology. He was interested in the issues of theoretical and clinical oncology. Many specialists know his works on tumor etiology (the impact of radiation factor), radiation therapy and surgical treatment methods, particularly ablastics and antiblastics. 10 candidate and 3 doctoral dissertations were presented under

Professor H.P. Kovtunovych's scholarly supervision. The most prominent representatives of Professor H.P. Kovtunovych's Lviv school of oncology include Professor A.I. Hnatyshak, doctor of medical sciences V. D. Keleman, Professor A.M. Serednytskyi, Professor B.V. Kacharovskiy, and Professor H.A. Ivashkevych, and others. He prompted one of his youngest colleagues, B. Bilynsky, to engage into the research of postoperative tumor relapse.

H.P. Kovtunovych's surgical clinic actively developed surgical approaches to the treatment of oncological patients. In particular, in the 1950's they actively studied surgical techniques of pancreas cancer treatment (pancreaticoduodenal resections), which became the topic of Professor H.P. Kovtunovych's and Associate Professor V. Keleman's monograph "Surgery of pancreas head cancer" (Kyiv, 1963, in Russian).

Further history of the Lviv school of oncology is tightly connected with the name of Professor Anatoliy Ivanovych Hnatyshak. It was already at that time that he started a serious research at Professor Kovtunovych's department. In 1950, he presented his candidate dissertation entitled "Cancer and tuberculosis". In 1959, he presented his doctoral dissertation entitled "Thyroid cancer". Using its materials, he published a monograph in 1963; for many years, it remained the only book on the topic in the former USSR. Professor A.I. Hnatyshak was the first person in the USSR who managed to concentrate teaching of oncology to students at a separate department, which he established in Lviv in 1966. It was on 5 October 1965 that the Lviv oncologic dispensary moved to the new premises and became the basis for the newly established department, and received the title of "clinical", which facilitates a more in-depth research into different branches of oncology.

For 20 years, Professor A.I. Hnatyshak had been doing active research and teaching. Its extent and value are proven by over 120 publications, as well as by the supervision over eight doctoral and 40 candidate dissertations. In 1975, "A textbook in general and clinical oncology" (Moscow) was published. It became the first textbook on general and clinical oncology for students. The popularity of this book is proven by its republication in 1989. The immense methodological experience in teaching oncology, which the department accumulated under the leadership of Professor A.I. Hnatyshak was reflected in another textbook for students entitled "Clinical oncology".

The oncologists of Ukraine and other countries know well the works by A.I. Hnatyshak on the problems of breast cancer, hormonotherapy, and the use of the indicators of sex chromatin in treatment of breast cancer, which were covered in the respective chapters of "An oncologist's handbook" (Kyiv, 1975), as well as his works on determination of the tumors' sensitivity to pharmaceutical treatment.

From 1986 to 2004 the department of oncology was chaired by Professor H.P. Kovtunovych's and Professor A.I. Hnatyshak's disciple B.T. Bilynsky,

doctor of medical sciences (1972), professor (1978). He worked as a doctor, oncosurgeon, head of the surgery department in a district hospital, resident doctor of the regional hospital, younger and senior researcher of the Research Institute of Hematology and Blood Transfusion, associate professor, and later a professor and chair of the department of oncology and medical radiology at the Lviv Medical University. In 1963, he presented his candidate dissertation entitled "Implantation relapses of breast cancer and their connection with cancer cells in the wound during mastectomy". He has been working at the department of oncology of the Lviv Institute since its establishment. He continues developing the traditions set up by Professor H.P. Kovtunovych and Professor A.I. Hnatyshak. He promoted democratic reformation of the healthcare system in Lviv region, co-authored the project of reorganization of the first Ukrainian hospice, and developed and implemented a screening system for early diagnostics of cancer among the employees of big industrial enterprises.

Professor B.T. Bilynsky's research interests and works cover a wide range of problems connected with surgical and conservative treatment of tumors, and research of the patterns of metastasis, hepatology, and immunology. B.T. Bilynsky is the author of over 500 publications including 11 monographs and 3 textbooks, among them the book "Oncology". It is the first textbook in this area for doctors and students written in Ukrainian (it was republished four times — in 1992, 1998, 2004, and 2007) and summarizes the educational experience of the department. He also prepared the manual "Modern schemes of polychemotherapy of the main diseases in adults and children". He was the advisor of 5 doctors and 20 candidates of medical sciences.

Over the last 12 years, under the supervision of Professor T. H. Fetsych, the department of oncology of the Danylo Halytsky Lviv National University has been actively involved into the elaboration of the new methods and techniques of treatment of locally advanced forms of cancer with different localization, which is proven by the articles and patents on application of intraoperative hyperthermic intraperitoneal chemoperfusion for treatment of patients with stomach cancer accompanied by peritoneal sarcomatosis, as well as on application of hyperthermic intraperitoneal chemoperfusion in cases of chemoresistant ovary cancer; the search for prognostic factors in esophagus and cardia surgery; the study of the role of separate cell-molecular factors of the micro-surrounding in progressing of malignant tumors of the female reproductive system. All of these correspond to the three areas of activity initiated at the establishment of the school of oncology, namely: 1) combination of theoretical and clinical oncology (immunology of tumors, sensitivity to chemotherapy, hormonal therapy); 2) individualization (personalization) of the approaches to treatment; 3) improvement of the surgical techniques and adjuvant therapy.

Several dissertations have been presented lately: "The estimation of efficiency of application of intraperi-

toneal hyperthermic chemoperfusion for chemoresistant ovarian cancer” (Dutchak U.M., 2013), “Intraoperative hyperthermic intraperitoneal chemoperfusion in treatment of gastric cancer with peritoneal carcinomatosis” (Yarema R.R., 2012), “Optimizing treatment of patients with metastatic colorectal cancer to the liver” (Zubarev M.G., 2011).

After Ukraine gained its independence, young Ukrainian researchers got new opportunities. Hundreds of young doctors got a chance to go for a practical training to famous European and American medical centers.

The Lviv school of oncology is broader than the department of the same name. It has been uniting the staff of the base institution, Lviv State Oncology Regional Treatment and Diagnostics Center (LSORTDC). The head of the department of chemotherapy, docent and candidate of medical sciences Ya.V. Shparyk has established cooperation with counterpart institutions in Europe and the USA. Due to this, one of the most powerful centers of chemotherapy in Ukraine has been established. Candidate of medical sciences T. B. Kachmar also works in this center. The center of chemotherapy cooperated with the researchers from the Institute of Hematology and Transfusiology, the candidate of medical sciences V.M. Matlan and doctor of medical sciences N.I. Kitsera, whose doctoral dissertation was dedicated to hereditary tumors.

The first Ukrainian “Hospice” chaired by the candidate of medical sciences Ye.B. Moskvyak is affiliated to the Lviv research school. Researchers from Ternopil, Ivano-Frankivsk, Rivne, and Lutsk also join our school. A number of practitioners from other regions of Ukraine also feel and declare their belonging to the school that used to be headed by such luminaries as H.P. Kovtunovych and A.I. Hnatyshak. The Lviv school of oncology has been cooperating closely with oncologists from our capital city.

The research school of oncology has always been disseminating its ideas through research and practical society of oncologists, which was traditionally headed by the leaders of the school. The reputation of the Lviv society has always been very high, which is proven by the publications of the Society’s reports in the famous journal “Problems of Oncology” (1963, 1966). Despite the considerable oncological and political problems that the country has been facing in general, and its healthcare system is not an exception, the Lviv school of oncology and the Lviv Society of Oncolo-

gists continue their functioning cherishing the best traditions of their predecessors. We remember that to reach new frontiers we have to rely on the experience of our teachers.

Science cannot develop outside the collective of researchers; and here, scientific schools play a great role, and the Lviv school of oncology is not an exception.

REFERENCES

1. Amosov NM. My worldview. *Vopr Philos* 1992; **6**: 50–74 (in Russian).
2. Bayev AA. On schools of thought. In: Mikulinsky SR, eds. *Science schools*. Moscow, 1977: 503–4 (in Russian).
3. Bilynsky BT, Kovalchuk IV, Shparyk YaV. Should hospices exist in Ukraine? In: *Rol i mistse oblonkodyspanseriv v orhanizatsiyi onkolohichnoyi dopomohy naseleenniui Ukrainy*. Proceedings of research and practical conference. Poltava 1994: 38–9 (in Ukrainian).
4. Bilynsky BT, Savran VR, Sterniuk BP, *et al.* A.I. Hnatyshak (the anniversary). *Vopr Onkol* 1977; **7**: 121 (in Russian).
5. Bilynsky BT, Shparyk YaV. The history of the Lviv Research School of Oncology. *Lviv State Medical Institute*. Lviv, 1994: 174–7 (in Ukrainian).
6. Bilynsky BT. 30 years of the department of oncology. *Acta Med Leop* 1996; **2**: 2–3 (in Ukrainian).
7. Bilynsky BT. An outline of the history of research at the Lviv Medical Institute. In: *Lviv State Medical Institute*. Lviv, 1994: 19–25 (in Ukrainian).
8. Bilynsky BT. At the sources of the Lviv research school of oncology (on the occasion of the 100th anniversary of Professor H.P. Kovtunovych and 85th anniversary of Pfoesor A.I. Hnatyshak). *Narodne zdorovya* 2002; **1** (in Ukrainian).
9. Bilynsky BT. Integration of Ukrainian science into the global science (prospects and problems). In: *Ukrayinoznavstvo i humanizatsiya osvity*. Dnipropetrovsk, 1993: 146–7 (in Ukrainian).
10. Bilynsky BT. *Per aspera ad astram*: an outline of research ideas of A.I. Hnatyshak. *Narodne zdorovya* 2007; **7** (in Ukrainian).
11. Bilynsky BT. The history of the department of oncology and medical radiology of the Danylo Halytsky Lviv National Medical University. *Ukr Zhurn Rad* 2006; **14**: 481–92 (in Ukrainian).
12. Hanitkevych YaV. Professors of the Lviv medical faculty, university, medical institute — local Ukrainians. *Acta Med Leop* 2014; **2**: 88–96 (in Ukrainian).
13. Hanitkevych YaV. Ukrainian doctors and researchers of the 1st half of the 20th century. *Biographical sketches and bibliography*. Lviv, 2002. 542 p. (in Ukrainian).
14. Zerbino DD. *School of thought as a phenomenon*. Kiev, 1994. 134 p. (in Russian).