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**DNIPRO PHARMACOLOGY SCHOOL:  
A 100 YEARS' JOURNEY  
(to the centennial of the department  
of pharmacology and clinical pharmacology  
of Dnipropetrovsk medical academy).  
Part I: 1918-1943**

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**Ключові слова:** *історія фармакології і клінічної фармакології, Дніпровська наукова школа фармакологів, 100-річчя розвитку*

**Ключевые слова:** *история фармакологии и клинической фармакологии, Днепровская научная школа фармакологов, 100-летие развития*

**Abstract. Dnipro Pharmacology School: a 100 years' journey (to the centennial of the department of pharmacology and clinical pharmacology of Dnipropetrovsk medical academy). Part I: 1918-1943. Mamchur V.I., Zhyliuk V.I., Kovalenko E.Yu.** *The article presents analysis of the main historical stages of the establishing and development of the scientific school of pharmacology of the State Establishment "Dnipropetrovsk Medical Academy of Health Ministry of Ukraine" for lapse of a 100 years. Part I (1918-1943) is devoted to one of the most important and difficult periods – the first stage of development of scientific school of pharmacologists: since the establishing the Department of Pharmacology of Katerinoslavsky Medical Institute in 1918, its first difficult steps in the organization of the department and creation of its facilities and equipment base, training process on fundamentals of pharmacotherapy, up to the period of formation of important scientific discoveries in experimental and clinical pharmacology and active scientific development of the whole direction of pharmacological school in the 30-40s of the XX-th century. It is shown that during the first 25 years of scientific and pedagogical work, the department turned into a powerful scientific school, which brought up outstanding scientists of the day to the medical science of our country, and formed a generation of young students and doctors with a new worldview, with understanding the importance and value of scientific knowledge of fundamental pharmacology, applied knowledge of rational pharmacotherapy and clinical pharmacology to improve the quality of patients' care in practical medicine.*

**Реферат. Днепровская школа фармакологов: путешествие длиною в 100 лет (к 100-летию кафедры фармакологии и клинической фармакологии Днепропетровской медицинской академии). Часть I: 1918-1943 гг. Мамчур В.И., Жиліук В.И., Коваленко Е.Ю.** *В статье представлен анализ основных исторических этапов становления и развития научной школы фармакологов ГУ «Днепропетровская медицинская академия МЗ Украины» за 100-летний период существования кафедры фармакологии. Часть I (1918 – 1943 гг.) посвящена одному из наиболее важных и сложных периодов - первому этапу развития научной школы фармакологов: от момента создания кафедры фармакологии Катеринославского медицинского института в 1918 р., ее первым трудным шагам в организации кафедры и создании ее материально - технической базы, налаживания процесса обучения студентов основам фармакотерапии пациентов, до периода становления важных научных открытий в экспериментальной и клинической фармакологии и активного научного роста и развития целого направления фармакологической школы в 30-40-е годы XX века. Показано, что за первые 25 лет своей научно - педагогической работы кафедра сформировалась в мощную научную школу, которая дала медицинской науке нашей страны выдающихся ученых своего времени, а также сформировала поколение студенческой молодежи и врачей с новым мировоззрением - пониманием важности и ценности научных знаний фундаментальной фармакологии, прикладных знаний рациональной фармакотерапии и клинической фармакологии для повышения качества лечения пациентов в практической медицине.*

... Science is not only knowledge,  
but also realization, i.e. skill  
of applying knowledge properly...  
(Klyuchevsky V.O., historian, XIX century)

Academic year 2018-2019 is outside the window ... For our Department of Pharmacology and Clinical Pharmacology of SE "Dnipropetrovsk Medical Academy of Health Ministry of Ukraine" it is a special historical period - we celebrate our 100th anniversary! The history of formation and creative development of the Dnipro scientific school of pharmacologists is closely linked with the activity and scientific life of our medical academy.

The Department of Pharmacology was established in 1918, in the early stages of the formation and development of our native academy, which was founded in Katerynoslav in 1916 on the basis of the Higher Women's Courses at the Mining Institute. In 1918 Katerynoslav University was founded, and the Medical Department of Women's Courses merged with the medical faculty of this university, and from 1920 became an independent institution – Katerynoslav Medical Academy. The Department of Pharmacology from the very beginning of the development of the history of our Academy occupies an important place at all stages of the historical development of Katerynoslav-Dnipropetrovsk medical institute.

During its centuries-old path, the department has experienced different periods: from the first complex steps of the creation of the material and technical base at the stages of its foundation and formation, the difficult times of reorganization transformations, difficult years during the Great Patriotic War and the restoration in the post-war years - to the active period of creative development of scientific potential and the creation of a large scientific school of pharmacologists, known not only on the territory of our country, but also around the world. But over a hundred years of its existence, the Department of Pharmacology, as a living organism of like-minded people, constantly strove and managed to preserve and pass through the years the basic ideas of the fundamental scientific school, being the center of medical education for many generations of medical scientists.

During its long 100-year-long route, the Department of Pharmacology has always been the leading experimental and theoretical base for the training of future physicians of different specialties for obtaining important knowledge on pharmacology, clinical pharmacology and pharmacotherapy of patients. The department has always been a great

cadre training unit for scientists who have become proud of our medical science, both domestic and world-wide. During many years outstanding scientists, devoted to medical science and the true oath of Hippocrates worked and found the possibility of their creative expression at our department at our department.

Pharmacology (from Greek *pharmakon* - medicine or poison and *logos* - science) is a science that studies the interaction of chemical compounds with living organisms for the possibility of treatment and prevention of various diseases and pathological conditions. One of the most important tasks of pharmacology is the research and implementation of new effective and safe medicines. This search and testing of new drugs is based on the close collaboration of pharmacologists with chemists and clinicians.

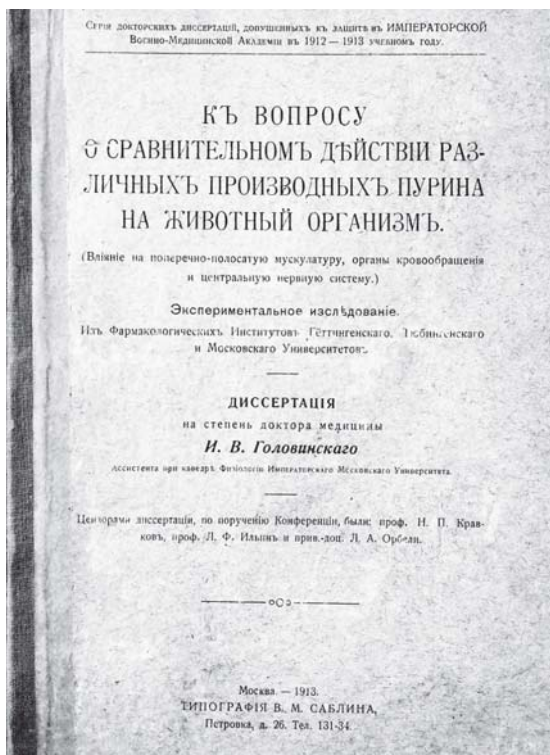
Therefore, pharmacology has always been and remains today one of the most important fundamental theoretical basic sciences of medicine, which has an important link with all other medical disciplines.

The peculiarity of pharmacology as a science lies in close integration with theoretical subjects - Anatomy, Physiology, Histology, etc., on the one hand, and all clinical disciplines - on the other hand, which historically led to the creation of a separate branch of this science - "Clinical Pharmacology".

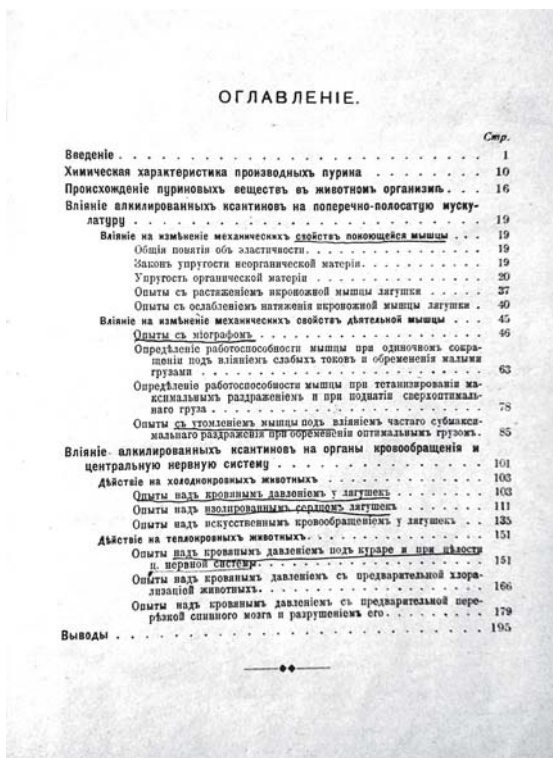
Pharmacology and pharmacy share importance in the treatment and preservation of the patient's health, but the distribution of these definitions is the most clearly reflected in the defining dictionary of V. Dal: "Pharmacology ... part of the medical science: about the action and about the use of drugs, potions".

Pharmacologist is a scientist in this area ... Pharmacy, pharmaceutics is a science of recognition, and preparation of medicines. Pharmacist, chemist, druggist, pharmacy student, who is engaged in pharmacy ... ". It is appropriate to mention the words of the famous domestic neuropsychopharmacologist, Professor L.O. Gromov: "... pharmacy without pharmacology is blind, and pharmacology without pharmacy is dead!"

The founder and the first head of the Department of Pharmacology at the Kkaterynoslav Medical Institute was Doctor of Medical Sciences, Professor I.V. Holovinsky, who headed it since its founding in 1918.



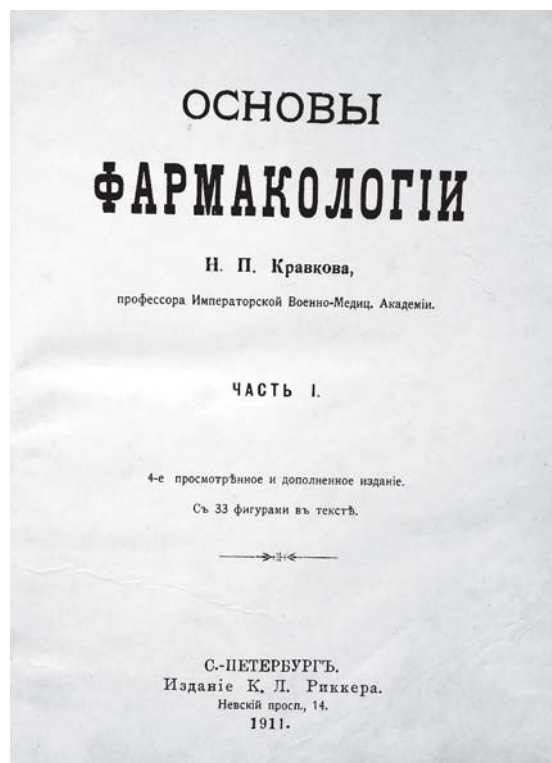
Dissertation paper of I.V. Holovinsky, 1913



Contents of the dissertation paper of I.V. Holovinsky

I.V. Holovinsky was educated at the Imperial Military Medical Academy in Moscow, he was a pupil of Professor S.I. Chervinsky, who headed the Department of Pharmacology, Dispensation of Medicines, Toxicology and doctrine of mineral waters of

this university. His research, which was devoted to the study of the principles of regulation of the cardiovascular system, the scientist also conducted in the pharmacological laboratories of Germany at Gottingen and Tubingen universities. It is known that Professor Holovinsky successfully studied the effects of choline, the effect of calcium and magnesium on the gas exchange in dogs, and the effect of alkylated xanthines on changes of mechanical properties of the muscle in a state of contraction and rest. The results of his scientific experiments were summarized in the dissertation paper "Doctor of Medicine": "To the questions about the comparative effect of various derivatives of purin on the animal body", which he successfully defended in 1913 at the Military Medical Academy (Moscow).



Textbook by M.P. Kravkov, 1911

Official opponents of I.V. Holovinsky were such well-known scholars as M.P. Kravkov, L.F. Ilyin, L.A. Orbeli. The name of Professor Kravkov M.P. is especially respected in scientific circles as the founder of domestic pharmacology. He is the developer of a number of methods of experimental research. Kravkov M.P. is the author of the fundamental work of the time - the basic textbook on pharmacology "Fundamentals of Pharmacology", published in St. Petersburg in two parts, which was published 14 times.

Professor I.V. Holovinsky headed our department during the first, especially difficult years of its

formation, which fell on the period of the Civil War of 1918-1920. But even then, important first steps were taken in creating material and technical base of

the department, and the foundations of teaching and methodological support of the process of teaching students were developed.



Textbook by Kravkov M.P. among the first textbooks on Pharmacology of the late XIXth and early XXth centuries

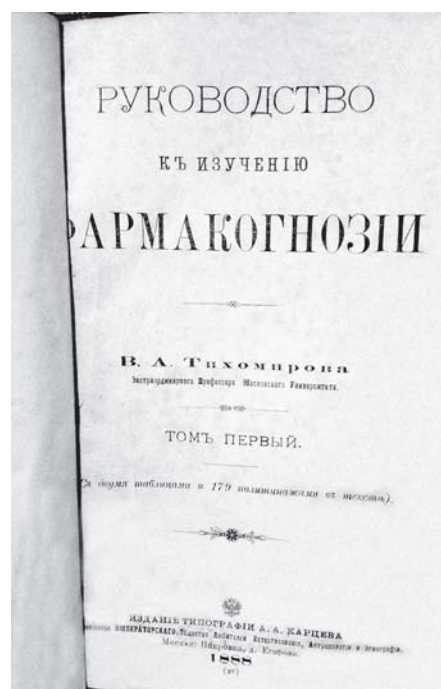
Professor M.O. Struyev became the second head of the Department of Pharmacology, he headed the department for the decade in 1920-1930.

V.A. Tykhomirov, the author of the textbook in 2 volumes "Guide to the study of Pharmacognosy", published in Moscow in 1888.



Professor M.O. Struyev

Mykola Oleksiyovych was an alumnus of the Moscow Medical Institute, where he worked under the guidance of a well-known scientist-professor

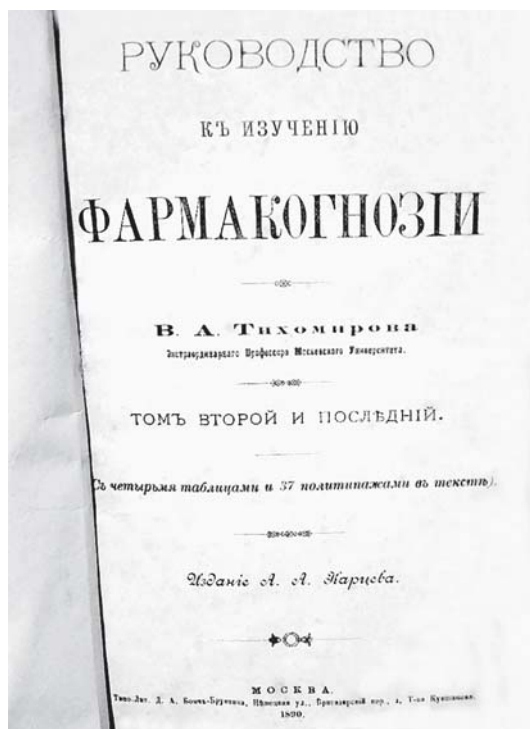


Textbook of V.A. Tykhomirov, volume I, 1888

Scientific direction of Professor M.O. Struyev was the study of mechanisms of intoxication in anthrax, which became the basis of his dissertation

work "The mechanism of death in anthrax," which was defended in Moscow in 1908.

As a talented scientist of his time, he was the author of 36 scientific works. Mykola Oleksiyovych also had deep knowledge in the field of related disciplines: Pharmacology, Pharmacognosy and Therapy. He combined his scientific work with clinical one and it was the first stages of the development of Clinical Pharmacology at our department.

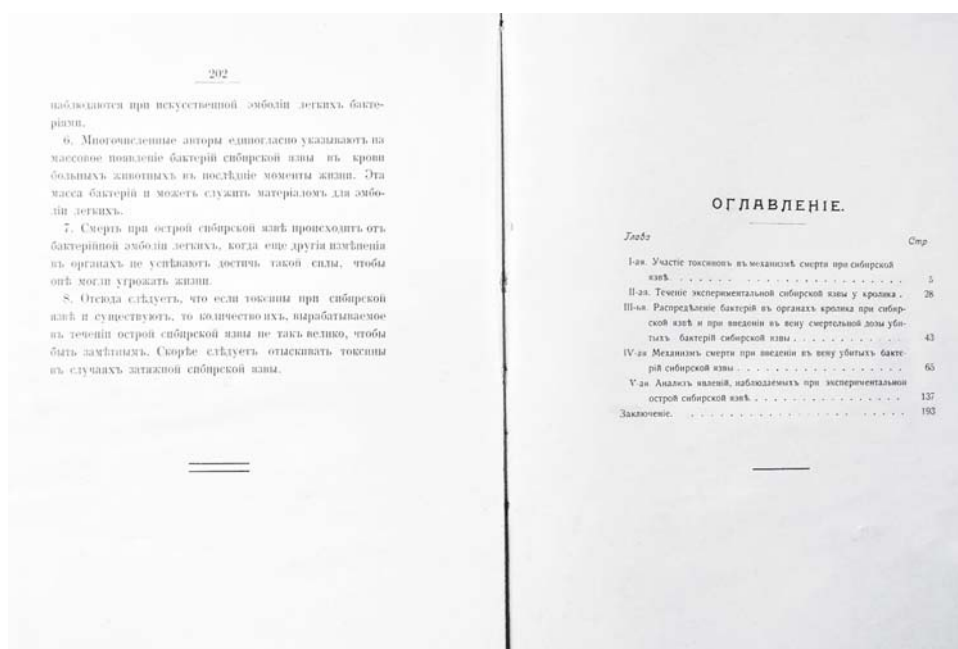


Textbook of V.A. Tykhomirov, volume II, 1890



Dissertation paper of M.O. Struyev, 1908

From archival documents it is known that the Department of Pharmacology in the 20s of the XXth century was located in the premises of Oleksiivsky Hospital on Sevastopolskaya street, 1 (now the building of the Academy where social sciences are taught) and in the beginning of 1930 was transferred to Zhovtnevaya square, 2 (building where Hygiene and disciplines related to Hygiene are taught), in those days the department occupied two rooms.



Contents of the dissertation paper of M.O. Struyev



**Oleksiivsky Hospital, where the Department of Pharmacology was located in the 20s of the XXth century**

In one of the rooms theoretical classes were hold, and the second was a laboratory, where in practical classes the effect of drugs on the body of experimental animals, samples of drugs and prescriptions for the drugs were demonstrated. Besides

the head of the department, prof. M.O. Struyev, the staff of the department included two assistants - Ya.A. Naumenko and T.I. Baturenko and technical worker, and the only equipment was a kymograph.



**In this house in the 30's of the XXth century the Department of Pharmacology was located**

Unfortunately, the archive materials of the department from its formation until the thirties are almost not preserved, only sample information

exists. We know that in 1930, Professor Lev Mykhailovych Chapkevich temporarily worked on a part-time basis, who also taught the course of

Propaedeutics of Internal Diseases, and from 1938 he headed the Department of Propaedeutics of Internal Diseases of the medical faculty.

The next stage of the department's development was the most successful in the pre-war period. From 1931 to 1941, the Department was headed by an outstanding pharmacologist, Doctor of Medical Sciences, Professor G.O. Petrovsky.



**Prof. G.O. Petrovsky**

G.O. Petrovsky graduated from the medical faculty of the Kharkiv Medical Institute in 1926, was a student of Academician O.I. Cherkes and initially worked at the Department of Pharmacology at the Kharkiv Medical Institute.

Professor Petrovsky, a brilliant organizer and enthusiast of science, created a large scientific school that included both the staff of the Department of Pharmacology and scientists of other departments and institutes.

The main scientific direction of G.O. Petrovsky was clinical and experimental study of the pharmacology of the digestive tract, especially bile secretion. Professor Petrovsky was the first to create a classification of drugs that affect the processes of secretion and excretion of bile ("Classification of choleric drugs (by G.O. Petrovsky)").

At the Department of Pharmacology, intensive experimental work was performed, candidate and doctoral dissertations were carried out. At that time Ya.A. Naumenko and T.I. Baturenko continued to work, and since 1933 the postgraduate training course was introduced at the department, which was completed by A.G. Kravchenko, N.G. Severin, O.Ya. Naumenko



**Stand devoted to the history of the department (1918-1943). Portrait of prof. G.O. Petrovsky**

For the first time Professor G.O. Petrovsky went in-depth at the aspects of clinical pharmacology, which led to the involvement of practical doctors and clinicians in scientific experimental work. The researchers of the Dnipropetrovsk Medical Institute and of other medical and preventive facilities actively conducted their research (L.T. Zlatin, I.Ya. Olkhovych, L.Ye. Hurtovyi, A.M. Kryshstal, S.I. Ravi-kovich, N.V. Martynova, H.L. Kanivsky, Ya.R. Flanchyk), who in after years worked at various departments of the Institute.



Stand, 1930-1941

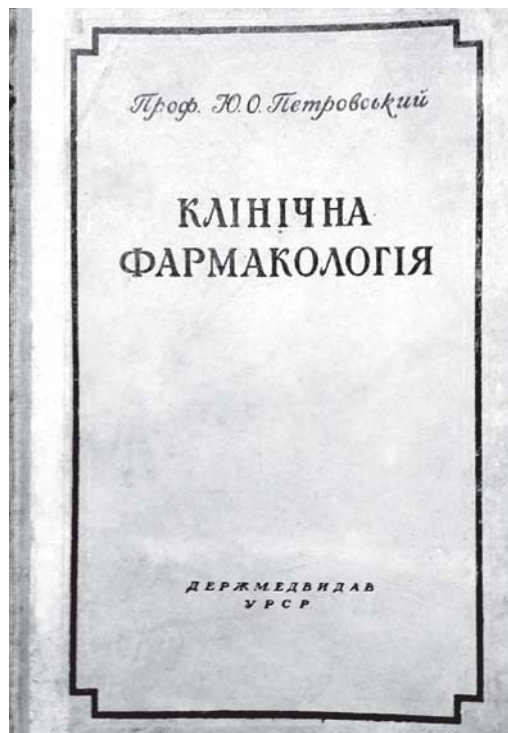
The teaching staff of the department increased to 17 members and included, in addition to the head, 2 associate professors, 4 assistants, 3 postgraduate students, 2 research technicians, a laboratory assistant, 2 dieners and 2 technicians. At that time I.A. Kopovoy, A.F. Platonova-Petrovska, N.H. Severin, K.S. Boyarska, I.B. Krasnova, A.M. Bondarenko, O.Ya.Naumenko worked at the department.

During 10 years under the supervision of Professor G.O. Petrovsky at the department 12 candidate and 2 doctoral dissertations were completed. In total in the prewar period, Professor G.O. Petrovsky published 34 scientific works.

The outstanding merit of Georgiy Oleksiyovych Petrovsky was generalization of the experience of studying the basic issues of clinical pharmacology with his staff, which became the basis for creation of the national textbook "Clinical Pharmacology", later published in the Ukrainian language.

Events associated with the Second World War made significant changes in the pedagogical and research work of the Department of Pharmacology and medical institute. At that time, a lot of work on training of specialists in practical medicine and scientists was interrupted. In August 1941 the Department of Pharmacology and other structural units of the Dnepropetrovsk Medical Institute were evacuated to the city of Stavropol where they continued working.

The next stage of the department's development began after realizing the city in November 1943, when the work of the Dnepropetrovsk Medical Institute was restored.



Prof. G.O. Petrovsky. First Textbook on Clinical Pharmacology



The great merit of scientists and heads of the Department of Pharmacology at that time was the development of scientific thought, fruitful joint work on elaboration and implementation of important tasks for improving the quality of treatment of patients. This led to the creation of a famous school of pharmacology. One of the first scientific directions of the school, which corresponded to the tasks of that time, was the study of the fundamentals of the pharmacology of choleric drugs under the supervision of Professor G.O. Petrovsky and development of scientific prospect "Clinical Pharmacology". The development of these important scientific areas has made a significant contribution to the processes of integration between basic fundamentals of science "Pharmacology" and clinical practice in understanding the issues of rational use of medicinal products.

As we see, the first twenty-five years of the formation and development of our department took place in a difficult period. Therefore, the merits of the outstanding scientists of that time are of special significance for us!

*The first, most complex steps of the development of the material and technical base of the Department of Pharmacology in the times of its foundation, the first important stages of the growth of teachers' teaching skills, the first experimental research ...*

And with the course of time these first steps led to the formation of a fundamental department, an important structural unit of our institute, which provides future physicians with theoretical knowledge and practical skills on such complicated disciplines as "Pharmacology" and "Clinical Pharmacology" for further understanding of the important issues of individual pharmacotherapy.

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