UNIVERSITY CLINIC OF TOXICOLOGY – HISTORICAL NOTE AND PRESENT WORK

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Abstract

The University Clinic of Toxicology (UCT) in Skopje was founded as the Clinic for Toxicology and Emergency Internal Medicine on January 15th 1976. Today UCT has a modern building with office space of 1,300 m² on 4 floors, 40 hospital beds and 72 employees including 18 doctors. UCT works in accordance with the public healthcare services in the Republic of Macedonia through the use of specialist / consultative and hospital healthcare for people over the age of 14 years. The Clinic also provides services in the field of emergency internal medicine, acute poisoning with medications, pesticides, corrosives, poisonous gases and mushrooms, heavy metals and other chemicals. The Clinic takes an active part in the detoxification programme for users of opiates and psychotropic substances, protocols for enteral and parenteral nutrition and guides for home treatment. Yearly there are more than 14,000 ambulance admissions, over 1,400 hospitalized patients, over 4,000 urgent EHO checks, more than 1,000 urgent upper endoscopies and over 700 other toxicological analyses and other interventions. The educational services and activities are realized through the chair for internal medicine. The Clinic offers undergraduate and graduate level education for medical students and dentists, for medical nurses, radiology technicians, speech therapists and physiotherapists. Over 300 papers and reports have been published to date by the medical staff at the UCT in the form of abstracts and integrated projects in the Republic of Macedonia and abroad. 8 doctorates have been successfully completed by employees from the Clinic as well as 4 master’s theses and 1 in-depth project. UCT employees are the authors of some textbooks and monographs. UCT have undertaken some scientific projects. Employees from the Clinic of Toxicology are members taking an active part in many domestic and international associations.

Key words: Toxicology Clinic, historical note, healthcare, education, research.

The Public Medical Institution: University Clinic of Toxicology represents a public and educational institution in the system for public health and the Medical Faculty as part of the Ss. Cyril and Methodius University. The Clinic was formed with the division of the Public Medical Institution, the Clinical Centre, as part of which it operated as the Clinic for Toxicology and Emergency Internal Medicine. The beginnings date back to the former clinic of internal medicine which was restructured in 1975. On January 15th 1976 the Toxicology Clinic was registered in Skopje as the Clinic for Toxicology and Emergency Internal Medicine. This is the start and the founding date for toxicological internal medicine as a subspecialty of internal medicine. The clinic takes part in the Community of 8 internal clinics where it functions as a separate entity but with a joint chair of internal medicine.

As part of the former internal clinical activity the Toxicology Clinic rendered general and specialist internist outpatient-polyclinic services. These services were rendered in a small building, part of the 5th tract of the former Internal Clinic. The space was divided into two levels: a polyclinic on the ground floor, and a clinical office on the first floor.

After the restructuring and division of the internal clinic, the Toxicology Clinic continues to operate as part of internal emergency medicine and all acute poisonings. It operated in reduced office space due to the operation of the emergency room of the paediatrics clinic. After the move of the paediatrics clinic to a new building, in 1987, partial reconstruction and re-adaptation took place. The clinic operated in this building until 2002, when with public grant financing as well as private financing the building underwent a complete reconstruction. Now the clinic has a modern building with office space of 1,300 m² on 4 floors. The building features the following departments as organized per floor space: BASEMENT: department for emergency
diagnostics with endoscopy cabinet, EHO diagnostic cabinet and toxicology laboratory; GROUND FLOOR: department for outpatient-polyclinic service with specialist/consultation infirmary, subspecialist/consultation Infirmary, ECG diagnostic cabinet, interventions cabinet and pharmacy; department for daily hospital care, clinical observations and daily therapy; department for intensive care unit and therapy with reanimation and intensive therapy; FIRST FLOOR: department for toxicology with toxicology information centre, detoxification unit and artificial clinical nutrition; department for internal emergency medicine and detention (separate building); SECOND FLOOR: library, student facilities, personnel facilities and offices.

The Clinic of Toxicology has 40 hospital beds at its daily disposal which are divided in the following way: 12 at the intensive care unit, 3 at the daily hospital, 1 at the suite, and the rest in double, three- or five-occupant rooms. All rooms are air-conditioned.

The Clinic of Toxicology employed only 23 employees in its founding stage. The first hospital manager was Prim. Dr. Bogdan Popovski. He was accompanied by 3 other doctors at this stage. Today the Toxicology Clinic employs 72 employees including 18 doctors (1 regular professor, 1 associate professor, 1 scientific researcher, 2 teaching assistants, 3 with master’s degrees, 2 primariuses, 8 specialists in internal medicine), 1 biologist, 31 nurses, 7 paramedics, 6 maintenance workers and 9 others as part of the administrative personnel.

Since its founding, the Toxicology Clinic has been managed by: Prim. Dr. Bogdan Popovski, Prof. Dr. Gorgi Pilovski, Prim. Dr. Branko Pavlovski, Prof. Dr. Cvjetanka Bozinovska, Research Fellow Dr. Niko Bekarovsky, Ass. Dr. Martin Petrovski and Prim. Dr. Andon Cibisev.

Public Healthcare Service

The Toxicology Clinic works in accordance with the public healthcare services of the joint clinic as part of the public healthcare service in the Republic of Macedonia. It renders its healthcare services through the use of specialist/consultative and hospital healthcare for people over the age of 14 years. All of its services are in accordance with international healthcare standards. The Clinic currently also provides services in the field of emergency internal medicine.

The Clinic provides continuous 24-public healthcare services during the whole week, every day of the year. As part of its daily activities it also provides specialized diagnostic, therapeutic and rehabilitation procedures. It also provides medical expertise in various fields. These include: acute poisoning with medications, pesticides, corrosives, poisonous gases and mushrooms, heavy metals and other chemicals. The Clinic takes an active part in the detoxification programme for users of opiates and psychotropic substances, protocols for enteral
and parenteral nutrition and guides for home treatment. The clinic also provides healthcare education and daily treatments that meet all the needs of its beneficiaries.

The Toxicology Clinic is a reference centre in the Republic of Macedonia. As such it maintains close connections with all healthcare institutions. It provides them with professional methodological help as well as continuous education and learning for doctors. At the same time, the Clinic makes use of the newest innovations and procedures in the field of medicine.

For the past few years, the Clinic has been confronted with an ever-increasing number of patients. Yearly there are more than 14,000 outpatient admissions, over 1,400 hospitalized patients, over 4,000 urgent EKG checks, more than 1,000 urgent upper endoscopies and over 700 other toxicological analyses and other interventions.

In 2007, the Toxicology Clinic was nominated as a State institution for control and information in cases of chemical poisoning. The nomination was made by the Ministry of Healthcare of the Republic of Macedonia.

**Educational Service**

The educational services and activities are realized through the department of internal medicine. The Clinic offers undergraduate and graduate level education for medical students and dentists. It also has a separate school for applied sciences for medical nurses, radiology technicians, speech therapists and physiotherapists. All programmes are in accordance with the European Credit Transfer System as used and implemented by the Medical Faculty. Moreover, the Toxicology Clinic offers a two-week practical training programme for students currently attending the 12th semester as well as continuous theoretical and practical education for doctors specializing in internal medicine, neurology, psychiatry, infective diseases and biochemistry.

The beginnings of the educational service date back to the foundation of the Clinic and its first doctors elected as assistants: Dr. Bogdan Popovski and Dr. Stoilko Andreevski. In 1976 two more doctors were elected as assistants: Dr. Asen Nikolov and Dr. Trajanka Panovska. In 1978 Dr. Elena Anceva joined the team of teachers and assistants, followed by Dr. Cvetanka Bozinovska and Dr. Biserka Kaeva in 1984. In the following years the number of assistants and junior assistants grew to 10.

The first teaching staff were chosen in 1990/1991, consisting of Dr. Gorgi Pilovski and Dr. Elena Anceva, and in 1995 Dr. Cvetanka Bozinovska joined the team of teachers. Unfortunately in the last decade there has been a decrease of teaching staff, especially assistants.

![Figure 2 – Prof. Dr. G. Pilovski, Doc. Dr. E. Anceva and Prof. Dr. C. Bozinovska and personnel](image)

Currently all theoretical and practical education is performed by a team of: Prof. Dr. Cvetanka Bozinovska, Prof. Dr. Daniela Capareska, scientific researcher Dr. Niko Bekarovski, Ass. Dr. Zanina Pereska and Ass. Jnr. Dr. Natasa Simonovska.

As part of the graduate level studies, all teachers have been mentors of doctorates, master’s theses and students’ essays/projects.
Scientific Work

The scientific work of the Toxicology Clinic is performed by daily meetings and reports on the clinic, toxicological lectures and presentations at the department for internal medicine, numerous seminars and symposiums, professional events and presentations in the Republic of Macedonia and abroad, doctorates and master’s theses, essays / projects / reports / publications.

Over 300 papers and reports have been published to date by the medical staff at the Toxicology Clinic in the form of abstracts and integrated projects in the Republic of Macedonia and aboard. 8 doctorates have been successfully completed by employees from the Clinic as well as 4 master’s theses and 1 in-depth project. Currently 3 more doctorates and 1 master’s thesis are being written and researched.

Some of the recent publications published by the Toxicology Clinic include:

- Bozinovska C, Pilovski G: Modern Diagnostics and Therapy in Medicine, Toxicology, Evropa, Skopje, 2000.
- Pilovski G: Clinical Toxicology, Skopje, 2000.
- Bozinovska C, Pilovski G: Internal Medicine, a textbook in 2 volumes, Toxicology, Makedonska riznica, Skopje, 2003.
- Bozinovska C: Clinical studies – Internal Propedeutics, textbook, Toxicology, Makedonska riznica, Skopje, 2006.
- Capareska D: Practice in Internal Medicine, Toxicology, Makedonska riznica, Skopje, 2006.

Some of the completed projects in which staff members took an active part include:

- Empowering activities for the concessive action from the early implementation of the Stockholm convention for persistent organic pollutants – POPs in the Republic of Macedonia: independent consultant Prof. Dr. Cvetanka Bozinovska, 2002.
- Monitoring Drugs and Addiction to Drugs.

The Toxicology Clinic is the initiator and founder of the Section of Clinical Toxicology and the Association of Toxicologists in Macedonia in 1991. The first chairperson was Prim. Dr. Bogdan Popovski. Through these sections and associations the Clinic takes an active part in all the activities of the Macedonian Medical Association and the Macedonian Medical Chamber. The Clinic also organizes scientific meetings, presentations, symposiums and congresses. Some of the past events organized include: the 4th Symposium of the Association of Toxicologists of Yugoslavia, the 3rd congress of ZTJ. The chairperson of this congress was Prim. Dr. Bogdan Popovski, and Doc. Dr. Elena Anceva was the secretary. The Clinic also organized some 6 scientific conferences and symposiums including the Macedonian Toxicology Days, with international participation. The Clinic keeps up to date information and maintains contact with many toxicology clinics and associations in the Republic of Macedonia and abroad.

Employees from the Toxicology Clinic are active members of many domestic and international associations, including: ZTM, MNZG, MZPEN, ZLKBP, EUROTOKS, UEMS, ABKT.

Figure 3 – Meeting of the medical doctors of the toxicology Clinic
ИСТОРИСКИ ОСВРТ И ДЕЈНОСТИ НА КЛИНИКАТА ЗА ТОКСИКОЛОГИЈА

Божиновска Ј.

ЈЗУ Универзитетска клиника за токсикологија, Медицински факултет, Скопје, Р. Македонија

ЈЗУ Универзитетска клиника за токсикологија (УКТ) претставува здравствена, наставна и научна установа во системот на јавното здравство и Медицинскиот факултет при Универзитетот „Св. Кирил и Методиј“. Сегашната клиника како самостоен правен субјект е регистрирана на 15.1.1976 година како ООЗТ Поликлиника за згрижување на ургентни интернистички случаи и Клиника за токсикологија. Денес УКТ претставува современ објект со површина од 1.300 m² на 4 нивоа, со 40 болнички легла и 72 вработени од кои 18 доктори.

УКТ здравствените услуги ги реализира преку специјалистичко-консултативна и болничка здравствена заштита на лица над 14 години од областа на клиниката токсикологија и ургентната интерна медицина. Во рамките на својата дејност спроведува специјализирани дијагностички, терапевтски и рехабилитациони постапки; дава специјалистички мислења и предлози и изграѓува нови стручно медицински доктринарни ставови во областа на акутните труења со лекови, пестициди, корозивни средства, отровни гасови и пеџурки, тешки метали и други хемикалии. Клиниката е вклучена во програмата за детоксикација на корисници на опијати и психотропни супстанции. Спроведува современи протоколи за артефакционална интернална и паренгрерна натријација. Таа е референтен центар во својата дејност. Годишно се регистрираат над 14.000 амбулантски прегледи, над 1.400 хоспитализирани болни, преку 4.000 урентни ехотомографски прегледи, над 1.000 урентни горни ендоскопии, преку 700 токсиколошки анализи и други интервенции.

Наставната дејност на Клиниката се реализира преку Катедрата по интерна медицина. На Клиниката се изведува додипломска и постдипломска настава за студенти по медицина, стоматологија и од Високата школа за медицински сестри, радиоолошки техничари, логопеди и физиотерапевти, како и континуирана теоретска и практична настава за лекари на специјализација по интерна медицина, неврологија, психијатрија, инфективни болести и биохемија.

Лекарите на Клиниката за токсикологија имаат презентирано и публикувано (во форма на аспектки и интегрални трудови) над 300 трудови на домашни и светски научни и стручни собири и публикации. На Клиниката се изработени 8 докторати, 4 магистериуми, 1 стручен труд, а во тек е изработка на 3 докторати и 1 магистериум. Наставниците на Клиниката реализирале индивидуална и заедничка публицистичка дејност како автори, коавтори и уредници, како и учество во реализација на научни проекти.

Клиниката за токсикологија е иницијатор и основач на бројни секции, стручно-научни средиби, симпозиуми, научни конференции и конгреси. Таа остварува соработка со повеќе токсиколошки центри, клиники и здруженци надвор од нашата земја.

Лекарите на Клиниката за токсикологија се членови на бројни домашни и европски асоцијации.

КЛУЧНИ ЗБРОВИ: Универзитетска клиника за токсикологија, историски податоци, здравствена грижа, едукација, истражување.
Prof. Cvetanka Bozinovska