

Erectile dysfunction, urinary stone disease, urological oncology, and urosepsis: *an integration of research and clinical practice*

SUMMARY OF THE HABILITATION THESIS

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My passion for medicine began to take shape during high school, where my studies in a science-focused computer science program helped develop analytical and methodical thinking—qualities essential for a medical career. My choice of urology was inspired by the mentorship of Prof. Dr. Ioan Coman, who guided me during my internship and residency in Cluj-Napoca. After specialization, I combined clinical practice at the County Clinical Hospital with academic work at the University of Medicine and Pharmacy in Târgu Mureș, drawing profound inspiration from the late Prof. Dr. Mihail Radu Boja, who instilled in me a drive for innovation and excellence in urology.

I was actively involved in the development and implementation of modern techniques such as percutaneous nephrolithotomy, contributing to their dissemination to other centers in Romania and the training of a new generation of specialists. My scientific activity, initiated during my residency, materialized in interdisciplinary collaborations, participation in national and international conferences, the publication of 22 articles in ISI-indexed journals (11 as the first author), and the authorship of 9 books and 10 book chapters, addressing topics such as erectile dysfunction, lithiasis, and oncology.

My research involvement extended to participation as a member in four major grants totaling 6 million RON and the coordination of two projects as principal investigator, opening new therapeutic directions in urology. Throughout my career, I have been guided by a profound passion for medicine, research, and education. My scientific activities have focused on innovation, exploring fields such as male sexual pathology, renal lithiasis, urological oncology, and urinary sepsis, contributing to their advancement through relevant studies published in prestigious journals.

In my research on male sexual dysfunction, I significantly contributed to understanding the relationship between erectile dysfunction and lower urinary tract symptoms, highlighting essential links between cardiovascular diseases, LUTS, and severe erectile dysfunction. In the field of renal lithiasis, I thoroughly studied percutaneous nephrolithotomy, demonstrating its safety and efficacy regardless of patient age or stone composition. By publishing these findings in

ISI journals, I have helped optimize surgical practice and develop patient-adapted therapeutic strategies.

Urological oncology has been another central pillar of my research. My work explored the use of tumor and molecular markers, contributing to early diagnosis and the development of minimally invasive treatments. I also investigated the impact of the COVID-19 pandemic on prostate cancer diagnosis, identifying challenges and consequences of diagnostic delays.

Exploring biomarkers and clinical scores in urinary sepsis was another significant research direction. My studies demonstrated the utility of markers such as procalcitonin and scores like SOFA and qSOFA, emphasizing the importance of personalized management for patients with severe comorbidities.

My academic career reflects a deep dedication to excellence in education, research, and clinical training. Early in my university career, during my residency, I actively engaged in the didactic activities of the Urology Department, working with exceptional mentors such as Prof. Dr. Ioan Coman and Prof. Dr. Radu Boja. These experiences laid the foundation for a career dedicated to curriculum development, modern teaching methods, and training future generations of doctors.

As an assistant professor, lecturer, and later associate professor, I have contributed to integrating theory with clinical practice, preparing students and residents for real medical challenges. Introducing innovative elective courses, such as Sexual Medicine, has diversified the curriculum. Additionally, I have embraced the digitalization of medical education, particularly during the COVID-19 pandemic, by developing online resources and organizing live broadcasts to maintain educational standards.

Completing my doctoral thesis in 2009 marked a turning point in my career. This experience reinforced my commitment to research, leading subsequent studies and initiatives that have advanced the field of urology. My involvement in the university's academic and administrative structures has been consistent, participating in licensing, specialty exams, and tenure selection committees, as well as ethics committees. Furthermore, my work at the Târgu Mureș Medical Campus Hamburg (UMCH) opened new international perspectives, contributing to training doctors in a global educational context.

My promotion to associate professor in 2022 was a significant milestone, strengthening my role in the development of medical education and research. Looking back, my academic and scientific activities, inspired by my mentors, have been guided by fundamental values such as excellence, innovation, and responsibility, aiming to train generations of doctors ready to face the challenges of a globalized medical system.

I plan to modernize the urology curriculum, incorporating topics such as telemedicine, personalized medicine, and robotic surgery while promoting hands-on training courses to enhance the practical preparation of students and residents. I aim to integrate artificial intelligence into diagnosis and treatment, using predictive models for minimally invasive interventions to reduce risks and optimize clinical outcomes. I plan to deepen my expertise in robotic surgery and participate in advanced training programs at prestigious national and international centers to apply the latest technologies in oncological treatments and renal transplantation.

In education, I will continue to support resident mobility to medical centers in Romania and abroad, encouraging knowledge transfer and a spirit of innovation. Through active participation in examination committees and mentoring, I aim to uphold high standards of medical training and prepare future dedicated and well-trained professionals.

These objectives are integral to my commitment to advancing modern urology, improving patient quality of life, and training generations of doctors capable of meeting the demands of a global, innovative, and patient-oriented medical landscape.