

**”VICTOR BABEȘ” UNIVERSITY OF  
MEDICINE AND PHARMACY FROM TIMIȘOARA  
DOCTORAL SCHOOL  
MEDICINE DOMAIN**



**MODERN RESEARCH IN THE DIAGNOSIS AND  
TREATMENT OF PATHOLOGIES – CLINICAL AND  
PRECLINICAL PERSPECTIVES**

**ABSTRACT**

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The habilitation thesis entitled "Modern research in the diagnosis and treatment of pathologies - clinical and preclinical perspectives" was organized in accordance with the legislation in force.

My name is Sarau Cristian-Andrei, I was born on 14.04.1975. In 1993, I was admitted to the Faculty of General Medicine at the "Victor Babeș" University of Medicine and Pharmacy in Timișoara. I graduated from the Faculty of Medicine in 1999 with a note of 9.97 and I passed the license exam with a note of 10. I completed my doctoral studies in 2007, the thesis "Complex recovery of coronary patients after PTCA with stent placement" elaborated under the coordination of Prof. Ștefan Drăgulescu, was defended on 23.11.2007, and was confirmed by the Order of the Minister of Education no. 45 of 21.04.2008.

This work, the habilitation thesis, is divided in accordance with academic standards into four parts: (i) the first part deals with scientific achievements, (ii) the second part is dedicated to academic achievements, (iii) the third part is dedicated to professional activity and the last part (iv) is dedicated to academic and scientific perspectives.

In the first part, the published works are presented along with the participation in various scientific events, the nomination of the important prizes obtained, the participation in research projects and in various organizations in the specialized field. The main research directions addressed are divided into three chapters, namely: (i) contributions related to common and atypical pathologies through morphological and histopathological observations; (ii) contributions related to the pathologies associated with the upper airways and (iii) contributions related to preclinical testing. Regarding the morphological and histopathological aspects, they play a defining role in the diagnosis and establishment of the therapeutic protocol in most pathologies, especially tumor ones. Therefore, we covered topics dealing with melanomas, basal cell carcinomas, bisphosphonate-induced osteonecrosis of the jaw, morphological variations of various arteries, genetic biomarkers for lung cancer prediction, chondrosarcomas, and primary tonsillar tuberculosis. The pathologies associated with the upper airways are pathologies that affect the lives of patients in a special way and often evolve into malignant pathologies. In the research carried out, we addressed metachronous tumors of the head and neck, malignant diseases of the larynx, rare benign tumors of the larynx, rare sinonasal lesions, involvement of the upper airways

in Wegener's granulomatosis and extranodal NK/T cell lymphoma, nasal type with skin involvement. In the third chapter dedicated to research, we emphasized the importance of preclinical research, presenting: the action of nicotine on healthy cells and the irritating potential on blood vessels, the antitumor potential of silver nanoparticles, the antitumor action of some types of probiotics and the cytotoxic effect of volatile oils.

The second part of the thesis is dedicated to the presentation of my evolution and achievements in academic development. In the period 2000-2013 I was part of the team of the Medical Polyclinic and Cardiac Recovery Discipline, and since 2013 I have been active within the Discipline of Medical Semiology 1. The Discipline of Medical Semiology was established in the early 50s and since 1974 has been operating within the Municipal Clinical Hospital of Emergency Timisoara. Services offered include: ECG, Holter ECG and blood pressure, spirometry, abdominal ultrasound, echocardiography, arteriography, ankle-brachial index determination, stress test, biological investigations. The main objectives are represented by didactic activities by conducting courses and practical internships in medical semiology at various long and short study programs, master studies, as well as scientific research activity through clinical studies and participation in international and national congresses. The didactic activity takes place in the hours of practical work with the students of the 6th year General Medicine section in Romanian and English, the hours of practical work with the students of the 3rd year General Medicine section in Romanian and English, and the I-II year General Medical Assistance, as well as participation in the supervision/coordination team within the license or admission works.

The third part is dedicated to professional activity. I graduated from the Faculty of General Medicine of the University of Medicine and Pharmacy "Victor Babeș" Timișoara (UMFVBT) in 1999, being an intern during 1999-2000 at the Municipal Clinical Hospital. . In the period 2001-2007 I was a resident doctor in the cardiology specialty at the Institute of Cardiovascular Diseases Timisoara. In the period 2007-2013 I worked in the field of cardiology. Since 2013, I have been a primary cardiologist. I chose to extend my specialization, which is why I completed a second residency in internal medicine between 2011 and 2014. Since 2014, I am also a specialist in internal medicine. Professional training also included participation in various events including: 2003 - Training at Lukaskrankenhaus, Neuss, Germany in the LEONARDO DA VINCI Grant project – Physiotherapy in cardiovascular diseases; 2004 - ESC Course "How

to identify and manage a cardiac recovery and cardiac exercise program" Bern, Switzerland; 2006 - ESC Course "How to Improve: Advanced Cardiac Recovery Training Program and Cardiac Exercise Program" Bern, Switzerland; 2007 - ESC educational course "Daily challenge from prevention - from guidelines to effective intervention", Sophia Antipolis Cedex, France; 2005-2007 - Sub-investigator in phase 2 of the clinical trial of medication of cardiovascular events in patients with stable coronary artery disease and left ventricular systolic dysfunction; 2005,2006,2008,2009,2014 - Protocol specific training; 2005,2007 - Training on Good Clinical Practice; 2006,2007,2008,2009,2014 - CRF training; 2006-2007 - Member of the hospital arm of EuroAspire III and the secondary arm of EuroAspire III; 2008 - Member of the scientific follow-up project EuroAspire III Romania; 2008-2009 - Sub-investigator in the 2nd phase of the clinical trial of medication for atrial fibrillation; 2008-2009 - Sub-investigator in the 2nd phase of the clinical trial of medication for the control of blood pressure; 2014 - Sub-investigator of the clinical trial with Cerelaxine.

The fourth part refers to academic and scientific perspectives. From a didactic point of view, I propose to put a special emphasis on the involvement of students in the didactic process, active participation in practical internships and interactivity. The basic actions that I propose are related to: an interactive teaching, encouraging the involvement of students in specific practical activities, periodic evaluations adapted to the current system that emphasizes digitization, stimulating the involvement of students in research activities, organizing educational and scientific sessions with these. An important part of my university career will be educational and scientific work with young PhD students. One of the main reasons why I decided to go further in my career, to write and defend this habilitation thesis, is the desire to guide young doctors in completing their doctoral studies and in completing their current doctoral theses in the field of cardiology with a preponderance. Another important part of academic development is related to the organization of postgraduate courses and EMC credit courses. I intend to be actively involved in organizing such current and necessary courses for young doctors. Regarding the contribution to increasing the prestige of UMFVBT, I wish to be actively involved by achieving the following objectives: participation in specialized conferences and the presentation of scientific papers, the creation of specialized articles, the creation of monographs/chapters in specialized treatises, the maintenance and creation of new collaborations at national/international

level, the organization of workshops and scientific medical congresses. The academic aspects of the career, those of personal development, along with the increase in the prestige of the university, are directly related to the research activity. Therefore, I believe that research activity must be a priority and I intend to continue to be actively involved in it. The main activities dedicated to research include: developing projects, producing impactful scientific articles in the field, proposing new research topics, etc.

The habilitation thesis ends with the bibliographic references and the list of the 10 representative scientific works.