

**„VICTOR BABEŞ” UNIVERSITY OF MEDICINE  
AND PHARMACY FROM TIMIŞOARA  
DOCTORAL SCHOOL  
MEDICINE DOMAIN**



# **HABILITATION THESIS**

**VENOUS, LYMPHATIC AND ASSOCIATED  
PATHOLOGY - A MULTIDISCIPLINARY  
APPROACH IN ORDER TO IMPROVE  
THE PATIENTS' QUALITY OF LIFE**

## **A B S T R A C T**

**Assoc. Prof. RADU-TEODORESCU DANIELA, MD PhD**

Department X – Surgery II  
Discipline of Surgery I

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## ABSTRACT

The present thesis entitled "**Venous, lymphatic and associated pathology - a multidisciplinary approach in order to improve the patients' quality of life**" presents a synthesis of the scientific research activity that has been carried out since the time I finished my doctoral thesis until now and of my academic and professional career.

Scientific research has been based on three directions of major importance at present, namely, study on improving the quality of life in patients with chronic venous disease, analysis of biomarkers and specific signs for infectious and tumor pathology, and follow-up of invasive and non-invasive therapies to identify better therapeutic approaches. Thus, the first part of the thesis was subdivided into three distinct directions aimed at the previously mentioned areas of focus.

The research was carried out in multidisciplinary teams that included teaching staff from the "Victor Babeș" University of Medicine and Pharmacy Timișoara, surgeons, orthopedists, gynecologists, imaging specialists, public health specialists, fundamental research specialists (morphopathologists, anatomists). In these teams, I was directly responsible for choosing the topics, the research methodology, the analysis of the patients included from the archive of Clinic 1 Surgery of the "Pius Brînzeu" Timișoara County Emergency Clinic Hospital. The research team was focused mainly on the etiological factors, prophylactic and curative treatment, life-threatening complications and sequelae of thromboembolic disease, venous diseases of the lower limbs and more.

The risk of fatal pulmonary embolism still persists, despite the application of international guideline recommendations, involving doctors in surgical specialties to work together for patient safety. The importance of these researches was included in the context of affecting the health of 32% of the Romanian population through these morbidities, the costs generated by the most serious and difficult to cure complication of chronic venous insufficiency, the venous ulcer, with a major socio-economic impact. The discipline directly involved in venous diseases of the lower limbs is Phlebology.

Chronic venous disease (CVD) also known as chronic venous insufficiency is a chronic, evolving disorder; it represents an invalid and cost-generating pathological condition, with important socio-economic implications. This pathology has significant morbidity, being one of the most widespread diseases in the world; it is underestimated, because it does not directly create mortality, neglected because it is a chronic, costly condition and it is preferred to treat it intermittently, during complications.

The neglect of venous diseases by the decision-making factors of the public health system also resides in the fact that there are currently no specialists dedicated to venous diseases, although numerous steps have been taken in this regard over the years, starting with the team formed by "the father of Phlebology in Romania" as Academician Pius Brînzeu was considered.

In 2018, thanks to the permanent insistence of the Romanian Society of Phlebology, the project "Training path for phlebologists in Europe - TRAPP" 2017-1-RO01-KA202-037136, ERASMUS+ project, started with the support of the European Commission. This project, coordinated by the Romanian Society of Phlebology, included teams from 5 European countries and aimed to define the profession of phlebologist in Europe. The project, in which I was directly involved as a coordinator designated by the Romanian Society of Phlebology, obtained significant results presented to the members of the European Commission within the European Parliament.

Preventing the occurrence of the vital complication, pulmonary embolism, is the responsibility of the attending physician, general surgeon, orthopedic surgeon, gynecologist, etc. who must perform a complete anamnesis, examine the patient and from the point of view of venous disease, preoperatively assess the risk and correctly and completely apply the prophylactic treatment. The general practitioner and the phlebologist specialist also have the responsibility of diagnosing and monitoring patients with these conditions in order to stop their progression towards disabling, difficult-to-treat complications.

Regardless of the cause, chronic venous insufficiency is easily recognized by distal edema, progressive skin lesions in the calves, slow-healing atonic wounds (varicose ulcers), and frequent relapses, even with treatment.

Moreover, untreated venous ulcers can degenerate malignantly, and a correct monitoring of the evolution and treatment, with the identification of optimal solutions contributes to complete healing and maintaining the quality of life of patients for a very long time.

Another alarming and ever-present problem is infectious contamination. Venous ulcers are considered infected from the onset. Its cure is not possible without asepsis, venous stasis contributes to maintaining the infection. We are currently in a continuous battle with one of the most widespread pandemics of our time, the infection with the SARS-CoV-2 virus, and all studies at the international level have demonstrated the neglect of patients with venous conditions during this period, and the complications have not stopped defend. It has been proven that only with proper management it is possible to control it.

In addition to the well-known signs and symptoms, laboratory tests and biomarkers have been shown to play a crucial role in the treatment and cure of infectious diseases. They are measurable indicators that can be detected in the body, providing valuable information about the presence, severity and progression of an infection. With an equally significant share, malignant diseases represent the alarming problem with ever-increasing mortality rates. Thus, biomarkers, in addition to symptomatology (which is often late), are of great importance in early diagnosis, treatment management, determining prognosis and monitoring the evolution of tumor pathology. They provide valuable information about the presence, characteristics and behavior of tumors.

Identifying an effective treatment solution is essential to therapeutic success, and scientific studies are continuously focused on finding new disposal, with increased efficiency and reduced adverse effects, all with the main goal of maintaining the patient's quality of life. Choosing between invasive and non-invasive therapies requires careful consideration of the specific condition, individual patient factors, and the expertise of healthcare providers. Often, a combination of both approaches may be employed to achieve the best therapeutic outcome.

The second part of this thesis is focused on academic achievements. The academic career began in 1993 as Assistant Professor in the Discipline of Anatomy (being a secondary doctor by competition in Clinic 1 Surgery) later, after obtaining the specialty in General Surgery, as Assistant Professor in the Surgery 1 Discipline of the University of Medicine and Pharmacy,,Victor Babes "Timsoara (UMFVBT). My evolution followed all stages of my teaching career:

- **1993-1996** Assistant Professor, Discipline of Anatomy and Embryology, Faculty of Medicine, UMFVBT

- **1996-2008** Assistant Professor, Discipline of Surgery 1, Faculty of Medicine, UMFVBT
- **2008-2017** Lecturer, Discipline of Surgery, Faculty of Medicine, UMFVBT.
- **2017 – Present** Associate Professor, Discipline of Surgery 1, Faculty of Medicine, UMFVBT

Academic involvement, in addition to teaching courses, seminars and coordinating internships of fourth-year students from general medicine (MG), the Romanian and English section in a sustained manner since 2008, of students from General Medical Assistance (AMG) and Radiology and Imaging Medical (RIM), is reflected in 35 books, book chapters, monographs, treatises, student courses, published in the specialty (28 first author).

The collaboration, communication and coordination capacities are also applied as a president of the Ethic and Professional Deontology Commission of the UMFVBT, as a member in scientific / professional societies, as follows:

- President of the Romanian Society of Phlebology
- Vice-president of the Balkan Venous Forum (founding member)
- Venous Pathology Expert Group
- Romanian Society of Surgery since 1995
- Romanian Society of Phlebology since 1993
- Romanian Society of Angiology and Peripheral Vascular Surgery
- Timisoara Surgery Society
- International Union of Angiology (IUA)
- European Venous Forum (EVF)
- European Digestive Surgery, (EDS) affiliated to UEGF
- International Federation for the Surgery of Obesity (IFSO)
- European Association for Endoscopic Surgery (EAES)
- International Union of Phlebology (IUP)
- Romanian Association for Endoscopic Surgery and Other Interventional Techniques (A.R.C.E)
- Romanian Association of Bariatric Surgery and Complex Treatment of Obesity (A.R.B.T.C.O.)
- Romanian-German Society of Gastroenterology and Coloproctology.

In parallel with the academic position, the medical activity was continued, discussed in chapter 3. After graduating from the Timișoara Institute of Medicine, initially as a trainee doctor (1986-1989) and a general practitioner (1989-1990) after passing the secondary exam in 1990, I worked as a secondary general surgery doctor in the Timișoara County Emergency Clinical Hospital (1991- 1993). Thus, exercising the profession as a specialist and since 1998 as a primary doctor in General Surgery proves the passion for medicine. The classical and laparoscopic surgical experience (over 1000 surgical interventions in the Surgery Clinic no. 1 in Timișoara and in the Surgery Clinic 3 in Cluj Napoca (as a PhD student) continues, from February 1991 until now, the permanent activity in the team has allowed a continuous exchange of knowledge with colleagues, having the opportunity to guide resident doctors in this specialty and in the operating room.

From 2017 to present, I am Associate Professor at UMFVBT, Medical Director of Pius Brînzeu Timisoara Emergency County Clinical Hospital (2014-2020) and President of the Romanian Society of Phlebology (2008-2014: 2023-present).

The last chapter addresses academic and scientific perspectives. From an academic point of view, I am concerned with the further development of the existing teaching and knowledge base on the etiology, pathogenesis, diagnosis and treatment of venous diseases and abdominal surgical pathology, research of methodology and medical informatics, emphasizing the existing connection of these sciences with clinical medicine. It would be important to develop new lectures/courses for both medical students, graduates and PhD students, broadening the scope of existing topics and integrating them into the context of cutting-edge medical research areas. I aim to develop customized medical research courses for doctors practicing in different surgical specialties. The students of the 1st year of the master's degree Legal and professional responsibility of the doctor, to whom I teach from 2022 knowledge about the organization of the health system, the attributions and responsibilities of the medical staff, ethics and deontology in medical practice represent another didactic preoccupation that I am concerned with fulfilling professionally.

From the researcher's point of view, I propose to continue together with the research team of the Venous Diseases Research Center belonging to UMFVBT, in collaboration with other research centers in the field in the country and abroad (with which I have collaborated in other projects and groups work) research themes

already started, projects in which PhD students will have a central place being proactively involved in cutting-edge applied and theoretical medical research. Some of the research areas addressed are already in the works: news about the epidemiology and pathogenesis of venous diseases, the particularities of the clinical evolution in rural populations, the safety of the new non-invasive methods implemented in terms of stopping the evolution and the absence of recurrences of venous diseases. In addition, the focus will also be on infectious and cancer pathology, which are so current, with an emphasis on biomarkers and innovative signs and methods of treatment.

## LIST OF 10 REPRESENTATIVE SCIENTIFIC PAPERS

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