

**“CAROL DAVILA” UNIVERSITY OF MEDICINE AND
PHARMACY BUCHAREST
DOCTORAL SCHOOL MEDICINE**



**THE HABILITATION THESIS
- SUMMARY**

Candidate: Chioncel Valentin, MD, PhD

Associate Professor,

“Carol Davila” University of Medicine and Pharmacy

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**MODERN MANAGEMENT OF
ACUTE CORONARY SYNDROMES
- INTEGRATIVE APPROACH**

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SUMMARY OF THE HABILITATION THESIS

The habilitation thesis on the topic “Modern management of acute coronary syndromes – an integrative approach” reflects both my abiding concern for one of the great challenges of cardiology, but also represents the result of professional, academic and research experience in the field of cardiovascular emergencies.

Acute coronary syndromes (ACS) remain one of the most frequent and severe emergency pathologies encountered in clinical practice, representing a constant challenge for cardiologists due to their pathophysiological complexity, the diversity of clinical presentations and the need for rapid and precise intervention. The present habilitation thesis offers a remarkable synthesis of current knowledge and personal experience in this field. The document, rigorously structured and based on a career of over 25 years in clinical and interventional cardiology, brings to the forefront a holistic perspective on ACS, integrating diagnosis, treatment and prevention in an interdisciplinary framework.

ACS, defined as a spectrum of conditions that includes unstable angina, non-ST-segment elevation myocardial infarction (NSTEMI) and ST-segment elevation myocardial infarction (STEMI), is a major public health problem worldwide. The paper highlights the high prevalence and significant impact of ACS on morbidity and mortality, citing an annual incidence of 150-200 cases per 100,000 people worldwide and a constant increase in cases in Romania, correlated with insufficient control of risk factors. These data reiterate the urgency of improving diagnostic and treatment strategies, especially in a demographic context marked by an aging population and increasing comorbidities.

For cardiologists, ACS represents a daily challenge, not only due to the need for rapid intervention, but also due to the diversity of clinical phenotypes and pathophysiological mechanisms involved. The thesis highlights atherosclerotic plaque rupture as the main triggering mechanism, followed by thrombosis, coronary vasoconstriction and systemic inflammation – processes that require a thorough understanding to optimize therapy. The role of inflammation and endothelial dysfunction, detailed in the chapters dedicated to pathophysiology, underlines the importance of an integrated approach, targeting not only coronary obstruction but also the underlying processes that perpetuate myocardial ischemia.

A strong point of the thesis is the emphasis on modern diagnosis of ACS, which combines clinical assessment, biomarkers and imaging in a well-defined algorithm. Angina pectoris remains the cardinal symptom, but attention is drawn to atypical presentations, especially in the elderly and diabetics, where dyspnea or nonspecific symptoms may dominate the clinical picture. This observation is crucial for cardiologists in emergency departments, where rapid recognition of atypical ACS can make the difference between life and death.

Risk stratification, detailed in the dedicated chapter, is another essential element. The TIMI, GRACE and HEART scores are presented as validated tools that guide therapeutic decisions, from conservative management to early invasive intervention. For cardiologists, the use of these scores is not just a formality, but a necessity for personalizing treatment, reducing both undertreatment and unnecessary interventions.

The pharmacological management of ACS, exhaustively described in the thesis, reflects recent advances and the ESC 2023 guidelines. Dual antiplatelet therapy is the foundation of thrombosis prevention, complemented by anticoagulants such as unfractionated heparin or enoxaparin. Beta-blockers, angiotensin-converting enzyme inhibitors (ACEIs) and statins are essential for patient stabilization and prevention of recurrence. New therapeutic directions, such as PCSK9 inhibitors or anti-inflammatory therapy with canakinumab, open promising perspectives, but also raise challenges related to costs and accessibility.

Interventional treatment, detailed in the chapters dedicated to PCI and CABG, is a highlight of the thesis. Primary coronary angioplasty (PCI) remains the gold standard for STEMI and NSTEMI, significantly reducing mortality. The use of pharmacologically active stents (DES) and imaging techniques (IVUS, OCT) have improved outcomes, but require a learning curve and resources that not all centers possess. Coronary artery bypass grafting (CABG) is reserved for multivessel or left main coronary artery disease patients, with long-term advantages, especially in diabetics.

An innovative aspect of the thesis is the focus on cardiovascular rehabilitation and digital technologies. Exercise programs, patient education and psychological support reduce mortality by up to 30%, an underestimated benefit in current practice. Telemedicine and remote monitoring, successfully implemented in modern centers, offer solutions for post-ACS follow-up, especially in rural areas – a valuable lesson for Romanian cardiologists.

My professional experience, reflected in numerous publications, articles published in prestigious national and international journals, book chapters, as well as research projects, are presented in detail and add credibility to the thesis.

My academic activity began in 2000 as a Assistant Professor at the "Carol Davila" University of Medicine and Pharmacy, evolving to Lector (2013) and Associate Professor (2022). For over 25 years, I have taught students, integrating interactive courses and interventional cardiology workshops. The 2012 doctoral thesis, "Secondary hypertension of adrenal origin", under the guidance of Prof. Crina Sinescu, explored the endocrine causes of arterial hypertension, offering valuable insights for cardiologists. I coordinated undergraduate and postgraduate courses (ECG, cardiopulmonary resuscitation, notions of interventional cardiology), contributing to the training of doctors in various specialties.

The chapter dedicated to professional activity outlines a notable career in cardiology, starting in 1995 with residency at the "Bagdasar" Emergency Hospital and continuing at the Floreasca Emergency Hospital and the "C.C. Iliescu" Institute, under the guidance of prestigious mentors.

Confirmed as a cardiology specialist in 1999 and a primary physician in 2004, I have worked since 2000 in the Cardiology Clinic of the "Bagdasar Arseni" Hospital, focusing on cardiovascular emergencies. Fascinated by interventional cardiology, I obtained my qualification in 2011, becoming an independent operator with the opening of the hospital's Interventional Cardiology Laboratory. Here, the team has evolved from a single room (and a single doctor) to a team of six doctors and two rooms, tackling complex procedures and device implants. Since 2022, I have been coordinating the hospital's STEMI Program, which manages the invasive treatment of acute myocardial infarction for patients presenting to the hospital on the day assigned.

My activity also includes contributions to the Romanian Society of Cardiology (President of the Emergency Cardiology Working Group 2020-2023) and the European Society of Cardiology (Fellow since 2023), reflecting a career dedicated to clinical excellence and education.

The academic career development plan proposes an integrated vision, focused on continuing education, research and mentoring. I aimed to introduce innovative methods (e-learning, clinical simulations), to stimulate doctoral students through international collaborations and publications, and to obtain grants for interdisciplinary research, thus also building a role as a trainer in cardiology and in the academic space.

Thus, my habilitation thesis can be a reference document for cardiologists, offering an integrative vision of ACS, from rapid diagnosis and precise treatment to prevention and rehabilitation. For the practitioner, it is an urge to continuously update knowledge, to interdisciplinary collaboration and to personalize therapy. In an era of evidence-based medicine, this work reminds us that success in ACS management depends on speed, precision and a patient-centered approach – principles that define the essence of modern cardiology.

For a cardiologist, habilitation represents the point of academic and professional maturity, conferring the ability to lead doctoral studies and to actively contribute to the training of the new generation of specialists. The document highlights that this stage is the result of a long process of continuous learning, development of pedagogical skills and involvement in scientific research.

In conclusion, the habilitation in cardiology is not just an academic title, but an essential stage in the formation of a leader in medical education and scientific research. A habilitation teacher must be an example of professional excellence, innovation and commitment to students, doctoral students and the medical community.