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**CHANGES OF PARADIGM IN INTERNAL MEDICINE IN  
TERMS OF INTERDISCIPLINARY COLLABORATION  
- SYNOPSIS OF THE HABILITATION THESIS -**

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## SYNOPSIS

The habilitation thesis entitled: “**Changes of paradigm in Internal Medicine in terms of interdisciplinary collaboration**” presents my entire scientific, academic and professional activity, but also future directions of academic career development. It is structured into four main chapters and it presents my evolution after earning the highest academic degree, that of Doctor of Medicine in 2011.

In the first part of the Habilitation thesis – **Introduction** – I briefly exhibit some biographic data and I also gladly recall the years I spend at the faculty in Iași, because it was then when I met my first mentors: Prof. Florin Pandeale, Ph.D. and Florin Mitu, Ph.D. (an Assistant lecturer at the time, but currently Full Professor), who knew how to instill my love for Internal Medicine in a unique manner, a feeling that would never leave again. Further on, I present the years of my residency training (carried out in Bucharest) with emotion and I bow with gratitude in front of those who altruistically contributed to my academic and professional training: Prof. Dan Andronescu, Ph.D., and Prof. Carmen Fierbințeanu, Ph.D.

**Chapter 1** presents the evolution of my scientific concerns in various stages. The research activity carried out from the beginning of my academic career until now has mainly focused on the field of Gastroenterology – a main branch of Internal Medicine, but due to the various pathologies managed throughout time both in the emergency hospitals in which I worked as an internist and gastroenterologist and in terms of my academic career, the studies published in recent years have had a multidisciplinary nature, which is in fact an essential aspect in the quality of the medical and research activity. The non-alcoholic fatty liver disease (NAFLD) has mainly been the core of the scientific activity, being considered a cryptogenetic clinical entity until recently in the field of gastroenterology and which also represented the topic of my doctoral thesis. The Ph.D. thesis entitled: “**Clinical-evolutionary predictive particularities of severity in patients with non-alcoholic steatohepatitis**” addressed an important public health issue and a field of current interest, i.e. non-alcoholic fatty liver disease, a clinical entity with an increasing prevalence which seems to become the most common indication of hepatic transplantation worldwide by the year 2030 (currently, non-alcoholic fatty liver disease has already become the main indication for liver transplantation in the United States). Moreover, being a systemic disease with systemic damage, it represents a real source of morbidity and mortality among the general population. Non-alcoholic

fatty liver disease is a generic term, covering a wide range of pathologic lesions, from simple hepatic steatosis without necro-inflammatory damage to a complex pattern of active inflammatory lesions, hepatocytic apoptosis (in case of non-alcoholic steatohepatitis) and liver cirrhosis. If simple steatosis is sometimes considered a benign condition due to the minimal progression rate to cirrhosis, steatohepatitis is associated with a high potential of unfavorable evolution, to a full clinical and biologic spectrum of advanced liver diseases: cirrhosis and hepatocellular carcinoma. By corroborating all the data obtained from the conducted research, we were able to conclude that we can identify the patients with non-alcoholic fatty hepatopathy and an evolutionary risk to steatohepatitis and advanced fibrosis by establishing a predictive pattern that incorporates the independent risk factors for the diagnosis of steatohepatitis. However, more testing and validation of the results and predictive patterns are needed to establish their role in clinical practice and to be able to replace hepatic biopsy in most patients with non-alcoholic fatty hepatopathy in the future. Moreover, the data and the outcomes of the thesis were capitalized through their presentation in oral communication sessions, being also included in national and international treaties of Gastroenterology, but also published in famous journals, such as: World Journal of Gastroenterology, Gastroenterology, Journal of Hepatology, Journal of Gastrointestinal and Liver Diseases etc.

In the following years, in the endeavor to find new means of non-invasive testing for hepatic fibrosis in non-alcoholic fatty hepatopathy, of steatohepatitis in particular, another study concern was the use of quantitative tests for the assessment of the hepatic function and I should mention the C<sup>13</sup> respiratory tests. The results of the research team that I was part of were also presented at the Digestive Disease Week in 2011 in Chicago, Illinois by Prof. Carmen Fierbințeanu, Ph.D., and were subsequently published in the Journal of Gastroenterology of the American Society of Gastroenterology. Moreover, in 2017, during the Digestive Disease Week in San Diego, California, in 2017, the results of another study that demonstrated that C<sup>13</sup>-Methacetin and <sup>13</sup>C-Octanoat respiratory tests have a high power in predicting advanced fibrosis in patients with non-alcoholic steatohepatitis were also presented.

If until recently the scientific world considered that the relationship between non-alcoholic fatty hepatopathy and type II diabetes mellitus is unidirectional, the year 2017 was a turning point in this regard and researchers have shown that hepatic steatosis can precede type II diabetes, thus highlighting the fact that the relationship between the two diseases is a bidirectional one, and these

arguments have this time motivated my interest to study the non-alcoholic fatty liver disease in this at-risk population.

In December 2019, a respiratory infection caused by coronavirus 2 associated with severe acute respiratory syndrome was described for the first time. Therefore, since then, one of the significant efforts made by all researchers has been to identify the possible risk factors that may indicate progression to severe infection and death. All these arguments made me follow this study directive, to describe the hepatic impairment of COVID-19 patients, especially those with non-alcoholic fatty hepatopathy and type II diabetes mellitus, and the results of our research were therefore published (Diagnostic, Experimental and Therapeutic Medicine), being also available internationally.

Inflammatory bowel disease and its assessment through non-invasive means was another topic of interest to which I have turned in recent years. Last but not least, cirrhosis and its complications were important topics in both my research activity and the preparation of some didactic materials (textbooks or courses addressed to students and residents). In addition to these main areas, the complexity of the cases seen in the emergency hospitals in which I worked (The Emergency University Hospital in Bucharest and, currently, The Emergency Clinical County Hospital Ilfov) determined me to establish new collaboration relationships with colleagues from other medical disciplines as well. I interacted with them in order to establish the best medical conduct for the patients with medical-surgical pathologies I cared for, but also as part of the research activity.

Also in Chapter 1, I presented all the books to whose publication I contributed as a co-author, but also the grants or the medical studies in which I took part in as a sub-investigator.

In **Chapters 2 and 3** of the Habilitation thesis, I presented my academic and professional development, as it took place throughout the 28 years since graduation from the medical school.

In **Chapter 4**, I presented the main directions of development in the field of medical research and in terms of medical education. For all these, I will attempt to include some young students of doctors in my team, with a solid preparation for this type of activity and those with notable results will be able to present them in the scientific field. The team will also be the engine of these projects from now on, and I believe that interdisciplinary collaboration remains the key to success in achieving all these objectives.