

SUMMARY

PAST, PRESENT, AND FUTURE IN THE PANDEMICS OF HIV/AIDS, COVID-19, AND OTHER EMERGING INFECTIONS

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The habilitation thesis entitled "Past, Present, and Future in Pandemics: HIV/AIDS, COVID-19, and Other Emerging Infections" is organized into four main chapters. This academic work draws upon insights gained from 34 years of medical practice, teaching, and scientific research conducted at the "Carol Davila" University of Medicine and Pharmacy and the "Victor Babeş" Clinical Hospital for Infectious and Tropical Diseases in Bucharest.

The first chapter, focusing on my scientific activity, outlines the key research fields and themes of interest, grants received, both national and international projects undertaken, outcomes of scientific pursuits, articles rated by ISI and BDI, educational materials developed, and acknowledgments received for these efforts. Since the beginning of my medical career, I have delineated specific areas of scientific interest, which were inspired by the unique pathologies treated in the department where I worked.

Nevertheless, my scholarly trajectory has been shaped not only by fields where I've already made significant contributions, such as HIV/AIDS infection, infections among immunocompromised and key populations, and hepatitis B and C virus infections but also by emerging research frontiers. These include the study of emerging infections like COVID-19 and monkeypox (mpox), which continue to present substantial public health challenges.

Throughout my years of professional engagement, my focus has revolved around various aspects within the domain of HIV infection. Specifically, I have been dedicated to exploring opportunistic infections in patients with HIV, particularly in children with parenterally transmitted HIV infection during early childhood. Additionally, I have studied neurological complications in individuals living with HIV, as well as the management of HIV infection within key populations, such as injectable drug users. My endeavors have also encompassed investigating coinfections with hepatitis viruses, assessing the standard of care for HIV and coinfections across Europe, and examining neoplasms in patients affected by HIV/AIDS. This introductory chapter provides an overview of the national (10) and

international (6) projects and grants in which I have participated, with a primary focus on themes surrounding HIV infection and chronic hepatitis.

Among these endeavors, notable mentions include the VIASAN Project, which investigated "Molecular diagnostic methods for central nervous system complications in children with HIV infection," and the HepGEN project, focusing into "Investigating viral and host markers correlated with the lack of response to antiviral treatment in chronic hepatitis C." Additionally, the project "Improving HIV/AIDS Prevention and Control and hepatitis B and C in Romania" (RO19.02) falls under the umbrella of "Public Health Initiatives." Noteworthy contributions also stem from my involvement in EUROSIDA hepatitis C research. Furthermore, three grants where I served as the project leader are detailed, including the Global Adolescent HIV Research Project ALHIV, aimed at identifying barriers to adherence to antiretroviral therapy among adolescents with HIV and devising intervention strategies. The PED-MERMAIDS project, funded by the European Community, focuses on Major Infectious Diseases Syndromes, while project 709844 HEPCARE EUROPE aims to establish a novel model of management for chronic hepatitis C among key populations. Through these initiatives and the dissemination of educational materials, I have endeavored to advance treatment and prevention strategies for viral diseases with heightened epidemiological risks. The outcomes of these projects have been presented at national and international conferences and published in ISI-rated journals.

Throughout my professional activity, I participated as the principal investigator in two clinical studies related to antiretroviral therapy and as a co-investigator in nine clinical studies on HIV infection and chronic hepatitis C.

After a long and in-depth experience in the HIV field, I completed and defended my Ph.D. thesis in 2004 entitled "Clinical aspects and evolution of the horizontally acquired pediatric HIV/AIDS infection", which was awarded "Summa cum laude". The HIV epidemic in our country was essentially different from other European countries by the presence of a homogenous group of children, born between 1987-1990, infected parenterally with a particular viral subtype (F1). The originality of the Ph.D. thesis consisted in the fact that it was the first study conducted in the country, on a cohort of 280 children with AIDS-defining opportunistic infections, belonging to the pediatric HIV cohort, in which statistical analyses were performed regarding the frequency of these conditions depending on the use of antiretroviral therapy and were compared with data published at that time in Europe. I contributed to the development of several textbooks for students and residents in infectious diseases (4) and chapters in three treaties in the field of infectious diseases. I translated the HIV

infection chapter for resident doctors from the Kumar and Clark - Clinical Medicine treatise. I am also a co-author in the section on opportunistic infections of the European HIV/AIDS Infection Guide, developed by the European Society for HIV Infection (EACS). I have also collaborated and translated into Romanian guides for HIV infection and monkeypox (mpox) under the auspices of the JUSTRI Foundation from the United Kingdom.

Following this introductory chapter, I outline my academic contributions in detail. These include 12 ISI articles where I served as the primary author, covering diverse themes such as HIV infection (including HIV and neurological complications, HIV coinfection with *Mycobacterium tuberculosis*, HIV infection and neoplasms, and infections in injectable drug users), hepatitis C virus infection, and emerging infections like COVID-19 and monkeypox (mpox). Additionally, 50 ISI articles in which I participated as a co-author are discussed, some in collaboration with esteemed scientific societies such as EACS, EuroSIDA, PENTA, and ECEE. Furthermore, this chapter highlights 10 significant publications from BDI-rated journals, along with 105 oral or poster presentations at international conferences, published in abstract volumes of select international ISI-rated journals, and 111 abstracts of works featured in national journals. Collectively, these publications have garnered 359 citations and earned a Hirsch-index of 10. The cumulative impact factor for articles published as lead author in ISI listed journals is 55.58.

My contributions to scientific and research endeavors are also acknowledged through various awards and distinctions. These include receiving an Honorary Diploma for my work in the field of HIV/AIDS infection, recognition for an article published in the "HIV Medicine" journal by UMF "Carol Davila," and being honored with the Merit Graduation from UMF Carol Davila for outstanding achievements in 2022.

Additionally, my organizational skills are highlighted, exemplified by my membership in 20 scientific committees for international conferences and 25 organizing committees for national and international events. Moreover, my role as a referee for international journals and conferences, along with my participation in the editorial boards of esteemed publications such as *HIV Medicine*, *Journal of Virus Eradication*, and the *Romanian Journal of Infectious Diseases*, are noted.

The second part of the thesis refers to academic achievements, from which I mention obtaining the title of Associate Professor in 2017 and certificates of supplementary studies in Health Services Management and Travel Medicine.

This part also includes the main teaching activities carried out in the field of infectious and tropical diseases for sixth-year students of the Faculty of General Medicine and for

residents in infectious diseases. It also presents the coordination activity of 55 graduation papers, two annual post-university courses in the field of HIV infection, the optional course of tropical diseases, and activities of guiding residents to participate with papers at national and international congresses and participation in admission, graduation, residency, promotion, and PhD examination committees.

The third chapter includes the professional journey of 34 years in the field of infectious diseases, starting in 1991 when I began working as an instructor and resident doctor at the "Victor Babeş" Infectious Diseases Hospital, up to obtaining the title of primary doctor and the quality of coordinator of the regional HIV Center and of the First clinical HIV/AIDS and immunodepressions ward, a position won after an exam.

I believe that my long professional experience in caring for patients from the pediatric HIV cohort is unique. I have witnessed firsthand the profound impact of this condition on the physical and mental well-being of these patients, whom I have cared for from childhood through adolescence and into young adulthood. Throughout this journey, I have continually strived to enhance my professional skills to deliver the highest standard of care to individuals facing severe infections, including those with HIV, other forms of immunodeficiency, individuals from key populations (especially injectable drug users with multiple comorbidities and coinfections), and women (including pregnant) with HIV infection. Additionally, in recent years, amidst the COVID-19 pandemic, I have been at the forefront as a frontline healthcare provider, tending to patients with severe SARS-CoV-2 infections.

Furthermore, the team I led was the first in the country, to provide care for patients with emerging infections such as monkeypox (mpox). Additionally, within the broader international context, we extended our care to migrants, refugees, and other mobile populations.

Throughout my career, alongside my teaching responsibilities, I consistently prioritized professional development. This commitment not only aimed at enhancing the quality of medical practice but also at expanding my knowledge in various studies and research projects. To this end, I actively participated in numerous national and international courses, congresses, conferences, symposiums, and other scientific events. Additionally, I completed two training programs focused on HIV infection at prestigious institutions such as the „Bambino Gesù" Hospital in Rome and the „Pitié Salpêtrière" University Hospital in Paris.

As a result of the long activity in the field of HIV/AIDS infection and international recognition, in 2012 I was elected Regional Representative for Eastern Europe within the European HIV/AIDS Society (EACS) based in Brussels, and since 2014 I have been part of the Steering Committee of this society. I am also a member of the Steering Committee of the international scientific society EuroSIDA since 2017, a founding member of the society ECEE (Euroguidelines in Central and Eastern Europe), a member of the WAVE (Women against Viruses in Europe) Steering Committee since 2022 and co-president of the section "Standard of Care for HIV and coinfections" within EACS starting with 2023.

The last part of the thesis includes proposals for the development of teaching activities for sixth-year students and residents in infectious diseases and proposals for new research projects and continuing collaboration with international scientific societies EACS, EUROSIDA, and ECEE.

In addition to continuing research directions in the field of HIV infection and viral hepatitis, my research activity will focus in the future also in the field of other infectious diseases with increased epidemiological risk, emerging infections, infections in migrants and mobile populations, and infections with multi-resistant germs and on antibiotic stewardship.

I wish that through scientific research, teaching, educational activities, and valuable publications, to contribute to increasing the prestige and visibility of the "Carol Davila" University of Medicine and Pharmacy and the "Victor Babeş" Clinical Hospital for Infectious and Tropical Diseases, and as a member of the Steering Committee of the European HIV Society and EuroSIDA to be a valuable ambassador of my country in the medical and scientific field.

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