

HABILITATION THESIS - ABSTRACT

Contributions to the diagnosis and treatment of Infectious Diseases in Romania

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The habilitation thesis entitled “Contributions to the diagnosis and treatment of infectious diseases in Romania” was elaborated in accordance with the Order of the Ministry of Education and Scientific Research No. 3121 / 27.01.2015 and the C.S.U.D. of the University of Medicine and Pharmacy „Iuliu Hatieganu” Cluj regarding the obtaining of the habilitation certificate.

My scientific, professional and academic activity, following the defense of my doctoral thesis in 2003, entitled "Contributions to the study of the etiopathogenesis, diagnosis and current treatment of sepsis" and to date, has been in the field of infectious diseases, special areas of interest being represented by: vector-borne diseases and especially Lyme Borreliosis (12 articles, 3 conference papers, 2 chapters), nosocomial infections, multi -drug antibiotic resistance and risk factors for nosocomial infections (3 articles, 11 conference papers) and sepsis (9articles, 5 conference papers).

I became the head of the Infectious Diseases Discipline in the 2014/2015 academic year. Within this position I had the responsibility to organize the educational program for Infectious Diseases and Tropical Parasitology for students of year IV and VI of the Faculty of Medicine, year IV of the Faculty of Dental Medicine, Romanian, English and French sections and year IV of Faculty of Nursing. Consequently, I followed the quality of the courses and the existence of course supports for students, as well as a better organization of the practical internship for the students to develop the following skills: evaluation of patients with infectious and contagious diseases; recognition of lesions specific to diseases with clinical diagnosis; rapid identification of signs and symptoms of serious infections; knowledge of the most important diagnosis tests; the ability to initiate and apply therapeutic strategies as well as the knowledge and application of the main measures of prophylaxis.

I introduced as a general practice the case presentation for students, made by students, under the guidance of teachers. For a better understanding of the pathogenic mechanisms and of the diagnostic methods we implemented in the students' curriculum, together with colleagues from the discipline of Immunology and Medical Imaging, a course of ' Immunology in Infections ' and a course of 'Infectious Diseases Imaging'.

Also for a proper development of the didactic activity, together with my colleagues from the discipline, we wrote the Manual for Nursing in Infectious Diseases.

I also introduced in the practical activity a 3-hours Debate of a topic of general interest, debated with arguments “for” for one team of students and arguments “against” for another team of students, with questions from the audience and finally with the voting of the team more convincing and with best arguments. All students and all the teachers participated in these debates. I consider these debates very useful in revealing the oratorical and didactic qualities of the students and I noticed their involvement with seriousness and pleasure.

Within the Infectious Diseases discipline, I am the residency coordinator and I followed the training in the specialty, I organized courses and exams for the residents from the specialties that have in the training curriculum, the infectious diseases module. I encourage the training of young residents in research by involving them in clinical trials, in compiling databases, in completing questionnaires for patients and

collecting laboratory samples and in statistical data processing. We also encouraged the participation of resident doctors, with original papers and case presentations, at national and international Infectious Diseases conferences. Of the works presented, 3 were awarded. During the Infectious Diseases conferences that we organized, we initiated the "Rezicase" session, case presentations for resident doctors supported by resident doctors. These sessions were moderated by a multicenter, multidisciplinary commission and, at the end, awards were given for the most interesting and beautifully presented clinical cases. Rezicase was later taken over by other conference centers.

I have introduced, in clinical practice, residents participation in the guard program as a secondary line to the emergency department, making them responsible for reading the guard report and with presentation of the cases that caused problems during the guard.

In order to encourage the permanent theoretical training every Friday from 2 pm, the resident doctors present a particular case within the clinic staff, which they took care of with theoretical discussions related to the case. I also introduced in daily practice the presentation of an article every morning, during the guard report, with news in Infectious Diseases.

For the continuous medical training of specialists, we organized, together with the discipline team, numerous postgraduate courses both in Cluj and in the cities of Transylvania for which we are a methodological forum: Satu-Mare, Baia-Mare, Alba Iulia, Zalau, Bistrita, Hunedoara, Medias, Oradea, postgraduate courses on current topics in Infectious Diseases and anti-infective therapies. These postgraduate courses were very well received, with a large participation of specialists in: infectious diseases, internal medicine, pediatrics, pulmonology, family medicine, emergency medicine, intensive care, the number of participants exceeding 100 people each time. In this way, we managed to offer Continuing Medical Education credits to colleagues from other cities and we achieved, through the annual development, a continuity of professional development. In addition, I contributed to strengthening the image of the university as an institution with a postgraduate educational role.

I collaborated in the master course entitled "Maternal-Fetal Medicine. Module I" organized by the Obstetrics-Gynecology Discipline I with the support of the chapter "Infectious pathology of pregnant women". With this occasion, I published in 2016 together with my colleagues in the discipline the book entitled "Infectious Diseases in pregnant women - a guide for gynecologists". The book that wanted to be a pocket guide for gynecologist presents very briefly the main infections that can influence the evolution of the pregnancy, the clinical picture, the methods of diagnosis and treatment as well as the complications on the pregnancy. The book was a real success, distributing it in 500 copies.

Also for a better visualization of our specialty and for increasing international collaboration, starting from 2010 we organized biennially, 5 National Conferences of Infectious Diseases with international participation entitled "Infection today. Therapy where to?" These conferences were organized together with colleagues from the Discipline of Infectious Diseases and Experimental Medicine from Radboud University Nijmegen, The Netherlands. Also with their collaboration we organized a mini-symposium in September 2013 attended by 43 colleagues from The Netherlands together with: Prof. Mihai Netea, Prof. Bart Jan Kullberg and

Prof. Jos van der Meer. It was a particularly interesting exchange of experience which was followed by collaboration in doctoral studies and research. In 2018 in Cluj I organized together with Prof. Mihai Netea the International Symposium on Innate Immunity and Inflammation which was attended by more than 200 people from all over the world and where we had famous speakers including a Nobel Prize winner, Prof. CA Dinarello.

Starting with the 2014 Conference and continuing with the 2016 Conference, we tried to propose a program that would attract other specialties. Thus, in 2014, we had as main theme "Interferences in infectious diseases" and we had presentations on pneumology, allergology, endocrinology, rheumatology, dermatology, nephrology, diabetes and nutrition, practically all specialties from our 6th Department - Medical specialties from UMF Cluj-Napoca. In 2016, we had as main subject Gastroenterology and Infectious Diseases and Imaging and Infectious Diseases and we had a special collaboration with colleagues from the Clu-Napoca Institute of Gastroenterology "Octavian Fodor" and the Medical Imaging Department of UMF Cluj-Napoca and Radboud University Nijmegen.

In 2013, 2014, 2015, we organized round tables on the occasion of the UMF "Iuliu Hatieganu" Cluj Napoca Celebration Days, attended by infectious diseases doctors and other specialties from Cluj and neighboring centers. Each program of these conferences was credited by CMR with 6 EMC credits.

In 2020, in Cluj, in the conditions of the COVID 19 pandemic, I organized a postgraduate course in June, a few months after pandemic beginning, in which my colleagues presented in two days everything that was known by then about the SARS-CoV2 virus, COVID -19, methods of diagnosis, prevention and treatment. We had an online participation of 214 doctors. It was the first online postgraduate course organized in University.

In October 2020, we organized online the 13th National Congress of Infectious Diseases with international participation, with COVID19 as the main theme. There were a lot of oral presentations, the main objective of the congress was to share the experience in the fight against Covid19 in a period in which the daily efforts in the hospital and the social distancing made the collaboration very difficult. The congress was also attended by speakers from Holland and Grece who shared their experience in pandemic management. Doctors from other specialties also participated, and presented the impact of COVID-19 on their specialty.

The research activity is an important part of the activity of any doctor and teacher. Researche is also important for me and I tried to combine my day by day activities with research. I was involved in a Horizon 2020 project: "Teaming of excellent research institutions and low performing RDI regions", representing UMF Cluj, project wined together with Radboud University Nijmegen, The Netherlands and Rheinische Friedrich-Wilhelms-Universität Bonn, Germany. The aim of the project was to organize and developed ROCSI center (**R**omanian **C**enter of Excellence for **S**ystems **I**mmunology) which wish to be built in Cluj with EU funds under the coordination of UMF Cluj-Napoca. This center aims to be an internationally recognized center of excellence (CoE) that develops high-impact research, education and innovation in human disease immunology. To achieve this goal, the CoE has included five long-term strategic objectives, aligned with different key areas: (1) independence, visibility and sustainability; (2) research and science infrastructure; (3) knowledge transfer and innovation; (4) education and training; and (5) human resources. By achieving

these objectives, ROCSI aims to contribute to changing the culture and improving Romania scientific and innovative capacity. The CoE wish to consider hiring talented Romanian and foreign scientists and to encourage links with local, regional, national and international stakeholders. In this sense, it could contribute to its own long-term sustainability. The CoE should be a new center, set up with newly developed infrastructure and equipped with state-of-the-art technology and equipment. This will allow CoE scientists to conduct state-of-the-art research in the field of immunology systems, helping to meet national health priorities. To create this CoE, the partnership had developed a detailed Action Plan (BP). The BP project defined the various aspects to establish, among others: strategy, objectives, research agenda, education and training strategy, knowledge and invention transfer strategy, physical and human resources, CoE communication. It was a project financed by the EU for 7 years and the center should be self-financed from the subsequent research activity. We won the first stage of the competition, remaining in competition 5 projects for the second stage, but at the end we did not win. It was the only project in the country that passed in the second stage of the competition.

In 2019 I won as project manager for Romania 2 HORIZON 2020 projects: ImmunoSep „Personalized Immunotherapy in Sepsis: a precision medicine approach” having as project director Prof. Mihai George Netea and HDM-FUN „Host Directed Medicine in Invasive Fungal Infections ”with Dr. Frank van de Veerdonk as project manager, both from Radboud University in The Netherlands.

I was also involved in a COST project, representing UMF Cluj-Napoca, EurNegVec (European Network for Neglected Vectors and Vector-Borne Infections) TD1303 COST Action, from 2013-2017. The main objective of the Action was to establish a powerful transboundary network of partner institutions across Europe that are involved in education and research related to arthropod-transmitted infectious diseases of man and animals, a network addressing the growing importance of vector-borne diseases at a time of Global Change, all integrated under the One Health concept, and reflecting the complexity and demands of current high-end research. During this project I met a lot of researchers involved in Vector borne diseases and I have participated to Action Conferences with lectures and articles.

I was involved in Project PN-III-P1- 1.2-PCCDI-2017-0005 (VectExcel-Platform for the Study of Neglected and Emerging Vectors) grant of Romanian Ministry of Research and Innovation, CCDI-UEFISCDI, within PNCD III along with USAMV Cluj, Cantacuzino Institute, Virology Institute Bucharest and The Danube Delta National Institute. During this study we made seroprevalence studies for vector borne diseases: Lyme Borreliosis, West Nile virus infection, Tick borne encephalitis.

From April 2007 to October 2014 I worked as medical director at the University Hospital for Infectious Diseases Cluj-Napoca, a position that allowed me to get involved in the administrative and organizational activity of the hospital. Within the managerial activity I organized and extended the Day Hospital service in our hospital and in the Integrated Outpatient Clinic and we established and organized in 2009, with the project for obtaining the Certificate of Management in Health Services, Lyme Disease Center, the only Lyme Disease Center in a public hospital in Romania. The financing of this center was from Health Insurance House Cluj through Day hospitalization services and clinical trials. Within the center we provided

diagnostic and treatment services for the population and we carried out research activity in collaboration with Radboud University Nijmegen Netherlands, Oxford Immunotec England and Boulder Diagnostics Inc. for a new diagnostic test for Lyme disease called Spirofind.

As part of the Day Hospital activity, in 2009 we initiated the Protocol for the evaluation of pregnant women for diseases at risk for pregnancy and the Evaluation Protocol for Lyme Disease, protocols which in 2015 were taken over by the National Health Insurance House and became national protocols.

Also during the medical management mandates, the Cluj Clinical Hospital for Infectious Diseases took over the Cluj Diagnosis and Treatment Center, which became the hospital's integrated outpatient clinic and thus our hospital has the largest outpatient clinic in the country, with 24 medical and surgical specialties, improving very much the quality and complexity of the medical services offered.

In 2020, with the onset of the COVID-19 pandemic, the Infectious Diseases Hospital was the first hospital in Cluj county involved in the fight against COVID-19, a phase 1 hospital only for SARS-CoV2 infected patients. I got involved together with my colleagues in the development of protocols for the prophylaxis of the spread of the infection in the hospital through the good organization of the circuits and the adequate use of the personal protective equipment. Later I disseminated this protocol to all hospitals in the city but also to hospitals in other cities. We also prepared the protocol for the treatment of SARS CoV2 infection and the protocol for the administration of convalescent plasma, protocols that we proposed to the National Commission for Infectious Diseases, the Institute of Hematology and Blood Transfusion and the National Commission for Intensive Care. For this activity I was rewarded with the Order of Sanitary Merit in the rank of knight by the President of Romania Klaus Iohannis.

Also in 2020, together with Dr. Amanda Radulescu, we drew up the "Plan of measures for organizing the activity within the University of Medicine and Pharmacy "Iuliu Hațieganu" Cluj-Napoca, in conditions of epidemiological safety for the prevention of diseases with the SARS-CoV-2 virus".

For the activity in the COVID19 pandemic and the involvement in organizing the anti SARS-CoV2 activity in the university I was rewarded with the "Iuliu Hatieganu" Grand Prize.

During COVID-19 pandemic I was author (one article in press) and coauthor (4 articles) for articles that presented pathogenesis, epidemiology, risk factors of SARS-CoV2 infection.