

**"VICTOR BABEȘ" UNIVERSITY OF
MEDICINE AND PHARMACY FROM TIMIȘOARA
DOCTORAL SCHOOL
MEDICINE DOMAIN**



**UPDATES AND PERSPECTIVES IN THE MEDICAL
ASSISTANCE OF HEMATOLOGICAL AND
ONCOLOGICAL PATHOLOGY**

ABSTRACT

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I presented my professional, scientific, and academic results in the habilitation thesis.

I am a consultant pediatric physician, a consultant pediatric onco-hematology physician, and a medical oncology specialist. Together with Mrs. Prof. Dr. Șerban, I performed the first hematopoietic stem cell transplant in Romania in 2001, followed by a series of other premieres in the field of hematopoietic stem cell transplantation as follows:

- allogeneic related stem cell transplant on 01/14/2003 and unrelated on October 1st, 2009, with the cord blood in October 2009, tandem transplant on November 8th, 2005, immunomagnetically selected stem cell transplant (Ewing sarcoma) on July 19th, 2005, allogeneic cell therapy with donor lymphocytes (DLI) on February 27, 2011, and unrelated allogeneic transplant in an infant with Severe Combined Immunodeficiency Syndrome (SCID) on November 3, 2014.

I am the chief physician of the department and I coordinate the hematopoietic stem cell transplant center in Timișoara, where over 500 transplant procedures have been performed.

I am the residency coordinator for pediatric onco-hematology. With the exclusive help of the sponsors, we carried out the capital repair of the building that houses pediatric onco-hematology and the transplant department (1850m²), we equipped the flow cytometry, molecular biology, and genetics laboratory, and the department of stem cell apheresis and cell banking.

I have been a teacher at UMF "Victor Babeș" Timișoara for 30 years and a university associate professor since 2008; I am the head of the IIIrd Pediatrics discipline within the XIth Department of Pediatrics. I am a member of the Pediatric Oncohematology Commission of the Ministry of Health.

I have published 16 books as an author or co-author and more than 250 scientific articles; I participated in 8 national research projects, and 4 international projects.

My main field of research aimed to improve the diagnosis and treatment of children with oncohematological conditions as well as the introduction of hematopoietic stem cell transplantation (HSC) into current practice in Romania in order to improve the chances of survival in these cases.

Within a multidisciplinary team, we ensured the performance of flow cytometry investigations in all cases of acute leukemia as well as the identification of molecular biology mutations that allow stratification into risk groups and the selection of cases that require a transplant procedure in therapy.

Oncological pathology was the main field of medical as well as scientific concern. This option is natural if we take into account the fact that in children cancer remains the first cause of death by disease and if we consider the great disparities in the evolutionary chances ensured by the medical performances in our country compared to those in the countries of Western Europe and the USA. We proposed as main objectives:

- deciphering the fundamental mechanisms underlying the development of pediatric cancer, dedicating 19 published papers to it
- investigating new drugs from the point of view of their effectiveness and safety by participating in an international clinical trial and
- obtaining objective information regarding the impact of new therapeutic protocols on the evolution, tracking adverse reactions in survivors, long-term psycho-somatic consequences determined by the disease or treatment, and expressing the experience in the field through a total of 5 works published.

Along with those published, a series of papers were presented at 97 national and 168 international or national scientific events with international participation. They were largely the results and conclusions of research projects in the field, won through national (9) and international (3) competitions.

Activity in the field of Pediatric Hematology

In the chapter on non-malignant hematological pathology, hemophilia has a major place. We addressed various topics: particular clinical forms, mainly related to the complications of the disease, as secondary morbidity or complications associated with the disease, (12 articles), pharmacoeconomics (12 articles), quality of life (10 articles), and surgical interventions in these patients (7 articles). We totalized 14 articles published in ISI journals. In the field of hemophilia, we also conducted 4 phase III clinical trials, which gave us the chance, even if modest, of participating in enriching the therapeutic armamentarium of this disease.

I have not neglected other chapters of benign hematology. Thrombocytopenias and immune neutropenias (14 articles), false thrombocytopenias (2 articles) or thrombophilic syndromes / antiphospholipid syndrome (7 papers), also entered our concerns.

Primary congenital immunodeficiencies are heterogeneous diseases that intersect semiologically with the previously discussed chapters of malignant and non-malignant hematology. Their way of expression can paint the picture of autoimmune cytopenias or malignant hemopathies, this reality that confronted us with this pathology to which we dedicated 4 ISI published works, participation in a clinical trial, and 1 research project.

Hematopoietic Stem Cell Transplantation (HSCT) Activity

TCSH, a relatively innovative therapeutic measure, is a complex, life-saving medical procedure for many severe, resistant forms of the disease in the previously presented chapters. This close interconnection of TCSH with the underlying pathology addressed by us explains our effort and finally our success in introducing this treatment in Romania.

It is the field to which I have dedicated 40 papers published in ISI journals regarding the importance and impact of graft quality, evolution, and factors of negative evolutionary prediction. The activity in the field was also supported by 4 research projects (1 international and 3 national with European funding).

In the course of the constant persistent concern for "Evidence-based Medicine" and for "Precision Medicine" our concern for medical genetics has progressively expanded and diversified. We followed it through conventional methods (karyotype, FISH), then through I, IInd, and IIIrd generation molecular sequencing techniques, serving all hemato-oncology-immunology chapters including general pediatrics. We reflected our experience in 38 papers published in ISI magazines.

My visibility in the field of research was ensured by the constant active participation in scientific events 97 of them national, 82 national with international participation, 86 international, by the presentations made there, by my involvement in the Romanian Society of Pediatric Onco-Hematology, by the role played in the organization of national and Romanian-Hungarian conferences and 3 international

conferences. My personal scientific visibility is reflected in over 205 published papers, 125 in ISI journals, and 75 in BDI journals with a total impact factor of over 15.75 in ISI-listed papers as a lead author.

Synthesis of academic activity and didactic achievements

Throughout my work in IIIrd Paediatrics Discipline, and especially after 2014, when I became the head of this clinic, I had the feeling of our teaching staff's obligation to create a university and postgraduate education space in accordance with the principles of modern education. Student-centered education is the benchmark targeted by teachers, students, and educational institutions alike.

We had in mind the modernization and improvement of the working methodology, the development of our communication capacity, and the opening of students' interest in research. We aimed to activate the students, demanding their employment and participation in various activities, thus stimulating the motivation for learning and the development and maturation of their personalities. Over the years, in accordance with the positions, I was responsible for the practical and theoretical training of students of General Medicine, year V, Dental Medicine, year IV. I have always adapted my didactic offer to their needs. I also had teaching obligations in postgraduate education, at Pediatrics residents/ at Hematology and Pediatric Onco-Hematology residents. In order to support the efficiency of the didactic activity, together with the members of our teaching team, we wrote 4 courses in Romanian and 3 courses in English.

I coordinated more than 25 undergraduate theses on pediatric oncology, hematology, and general pediatrics. I got involved in postgraduate professional training activities by participating in at least 10 conferences, and summer schools, aimed at improving and updating the knowledge of pediatrics, hematology, immunology, and oncology, organized in Oradea, Timișoara, Buziaș, Moeciu. I have participated nationally in the preparation of the license/residency exams contributing to the writing of the tests in a way in which the results reflect the preparation of the examinees.

Synthesis of medical activity and professional achievements

The medical activity was and is a special dedication for me and for the team I coordinate. In a SWOT analysis, our strengths are:

- the quality of the medical team, with multiple skills (Pediatrics, Hematology, Oncology, Pediatric Onco-Hematology) that covers all our needs for the medical act
- prompt, constant availability of essential performing laboratory explorations for all areas addressed, including TCSH and
- a long collaboration with specialized medical centers in Europe (Germany, Austria, Hungary).

Our visibility is certified by the operation in the clinic of no less than 4 Expertise Centers accredited by the Ministry of Health: Expertise Center for Primary Immunodeficiencies, for Hemophilia and related diseases, leukemias and lymphomas, and for genetic diseases with mental retardation. To these is added the quality of the European Hemophilia Treatment Center and European EUHASS Reporting Center, Jeffrey Modell Center, and J Project for primary immunodeficiencies. I cannot fail to mention here our TCSH Center, a European accredited center, with an activity dedicated to both child and adult pathology, awarded at the European level. Due to the existence of some super-specialized compartments, unique in this part of the country, we were able to attract particularly good funding through the National Health Programs of the National Health Insurance House and the Ministry of Health. Thus, within the IInd Pediatrics department, 7 programs are running: the National Oncology Program; hematopoietic stem cell transplantation; Immunodeficiency; Hemophilia and Thalassemia; Diagnosis of acute leukemias; Rare Diseases and treatment for Chronic Thrombocytopenic Purpura.

CAREER DEVELOPMENT PLANS

From the position of a discipline with many strengths and opportunities, but aware of the fact that it is not without its weaknesses and the risk of facing threats, I will build a career development strategy, which I present below.

Teaching activity development plan

At the basis of the development of my educational strategy, I will place the principles of vision, mission, and value of our university, persistently pursuing the increase of our visibility. In this regard, I will pay attention to:

- continuing the compatibility of our medical education with European standards and adapting the curriculum to an integrative education system
- promotion in the education process of data and information regarding the principle of "Evidence-based Medicine" and "Precision Medicine"
- increasing the compliance of teaching staff through participation in conferences, scientific meetings, and professional round tables
- debating current issues of public health, bringing them to the students as well
- promoting research in large collectives with the participation of colleagues from other centers/other countries, including students.

In conclusion, my objectives in the didactic activity will be: to meet the expectations and needs of students, and doctors in postgraduate training, so that my offer corresponds to the needs of competitiveness, performance, and adaptability in the labor market and to always have in mind the principles of the educational process, guarantee of a successful future career: to ensure optimal accessibility, to promote an attitude of linking concrete notions with abstract ones, theoretical data with practical ones and to motivate the education process, advocating for persistent work and responsibility

I hope that under these conditions I will succeed: to align my offer with the needs of the labor market, creating a study environment that favors creativity, initiative, and intellectual skills, introduce my students to their future practical work, and performing research work with the best odds.

Medical activity development plan

In my medical career, I will propose to myself and my entire team to promote:

- a patient-centered medicine, where health and life needs and priorities are at the forefront of our concerns;
- an integrative medicine that works alongside clinical medicine in close collaboration with other fields of medical sciences: biochemistry, microbiology, molecular biology, pharmacology, etc.
- an evidence-based medicine, a factual medicine with quantitatively estimable and statistically evaluable evidence,
- a personalized medicine
- a pharmacokinetically guided medicine
- a precision medicine,
- a medicine with non-discriminatory access for all,
- a medicine carried out in conditions of close collaboration with research and
- a medicine connected with didactic activity and professional education.

As a working tool, I will pay attention to the promotion of the quality of human resources and the use for their advancement of objective, controllable criteria, the quality of the medical act, and good administrative-organizational management to attract optimized financing.

Pursuing these goals and assuming the principles of our medical status of acceptance of medical obligations and their responsibility, constructive empathy for the patient, and constantly updated competence, I hope to achieve our strategic goal, better medicine for all.

Research activity development plan

In accordance with the University Charter, starting from the premise of the indispensable nature of research for the progress of medicine, I will place myself in the position of supporting and promoting research activity in my team. In this framework, I will facilitate the development, improvement, and revitalization of research aiming at

interdisciplinarity, international collaboration, the formation of a young generation of specialists with research skills, and the increased scientific visibility of our clinic.

I will strive to make optimal use of the centers of excellence operating within the clinic. In order to obtain performance indicators of the best value, I will apply the measures aimed at:

- identifying and establishing the axes of our main fields in research
- supporting and encouraging teachers to develop research projects and candidates for national and international competitions
- finding and pursuing goals of interdisciplinary interest,
- using the optimal framework for development, but also for increasing our visibility
- stimulating and supporting young people: students, residents, and medical specialists for undergraduate, master's, and doctoral studies
- the use of the individual results of teaching staff in the field of research in our promotion policy and
- ensuring an efficient research infrastructure.

By increasing the number of research projects and those involved in them, by promoting multidisciplinary approaches and collaborations with other research collectives in the country and abroad, I hope to solve the indispensable financial resources.

Excellence, creativity, competitiveness, interdisciplinarity, and cooperation will serve efficiency in education and research, aiming to put the results at the service of the sick, the constant and essential objective of our work.

In perspective, my intention is to develop clinical research in the field of pediatric onco-hematology by attracting young Ph.D. students. By collaborating with the other pediatric onco-hematology centers in the country, and creating a unified diagnosis and therapy protocol. I will continue the activity of hematopoietic stem cell transplantation in Timișoara.