

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



**EVOLUTION AND DEVELOPMENT IN CURRENT
ORTHOPEDICS AND TRAUMATOLOGY**

ABSTRACT

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In the following pages I will present my educational evolution and professional development in orthopedic and trauma surgery, as well as my academic career. I graduated from the University of Medicine and Pharmacy "Carol Davila" from Bucharest, Faculty of Medicine, in 1998 and pursued a residency in orthopedics and trauma surgery in Timisoara. In 2007 I had my PhD in Medicine public thesis defense, entitled "New dynamic systems for the treatment of fractures of the trochanteric region of the proximal femur: clinical and experimental studies", under the scientific coordination of Professor Horia Vermesan, MD.

Scientific Activity / Scientific Achievements: The research topics I have approached over the years in the field of medicine - Orthopedics and traumatology are: arthroplasty and hip fractures, knee arthroplasty and arthroscopy, trauma, experimental research. The results of scientific and research work have been confirmed by a large number of citations in indexed journals Web of Science.

In the first of the topics approached, I will present in stages the studies in this field that I have carried out and in which I have participated as a member of the team. In a study we aimed to determine the psychometric testing of the hip Oxford score, in patients with chronic pathology. In another study, we aimed to determine whether hemoglobin at admission, lymphocyte count, and neutrophil / lymphocyte ratio may predict survival at 1 year after hip fracture patients. Occult hip fractures (invisible on acute radiographs) are often difficult to identify in an emergency. The purpose of our paper is to present our experience and to identify a diagnostic and management algorithm. Occult hip fractures should be suspected in all patients with suggestive symptoms and negative initial radiographs. MRI is the gold standard, but it is not always available in the emergency department. Avascular necrosis of the femoral head is a complication of pertrohanteric fractures that cannot be predicted or avoided. The optimal treatment in these cases is uncemented total hip arthroplasty. Hip surgery is one of the most common and favorable orthopedic procedures. Although rare, complications occur and are associated with unfavorable evolution. We wanted to identify and describe the severe complications that occur immediately postoperatively in patients with traumatic and elective hip procedures.

Knee arthroplasty and arthroscopy is the second research topic I will develop further. Patient-specific instruments (PSIs) have been designed to improve the

accuracy of tibial osteotomies (OW-HTO). This study aims to evaluate lower limb alignment by comparing the desired preoperative correction with postoperative correction, surgical time and number of radiological exposures in OW-HTO using patient-specific instruments (PSI) versus conventional osteotomies and specific and nonspecific complications. The ratio of neutrophils to lymphocytes is within normal limits in patients with early-stage knee osteoarthritis and is not associated with clinical severity or joint edema. The key to a successful replacement of the knee joint is to restore normal kinematics with a neutral alignment, so a hip-knee-ankle (HKA) angle of 180 ° (within 3 °). Conventional total knee arthroplasty has been shown to have excellent results, but is based on an extensive visual reference of bone landmarks. Customized cutting trances ensure precise bone cuts, while also reducing the risk of fatty embolism, blood loss and the duration of surgery. We cannot recommend PSI for a better result. It is an alternative to conventional and computer-assisted total knee arthroplasty, but further studies are needed to evaluate the surgical or economic benefits of obtaining customized instruments. The first step to better results in ACL surgery is to understand the anatomy of the ACL and identify its imprint. The second step is to be aware of the technical requirements and realize that it is a technique with a lot of complications, one that requires a good fixation of an optimally prepared graft. And finally, we should remember that choosing the right patient for the operation and carefully observing him during the recovery period is an important factor in view of the excellent results of ACL surgery. All cases of early gonarthrosis have degenerative lesions of the meniscus, along with cartilage lesions. It is difficult to determine whether they are also responsible for the symptoms and the treatment is not clarified. Degenerative meniscal tears in the context of a global joint damage have a marginal benefit through surgical treatment compared to the conservative one.

In the following, I will detail the academic path and the main didactic responsibilities, the elaborated didactic materials, the guidance of the students to the bachelor's theses and to the student scientific communication sessions, participation in entrance exams, bachelor's, promotion and administrative and managerial activities. Since 2019 I have been appointed Associated professor in the I-st Discipline of orthopedics and trauma. I have been practicing orthopedics in the I-st

Clinic of orthopedics and trauma, Emergency clinical county hospital "Pius Brînzeu", as well in the private practice.

From my scientific activity I would like to emphasize 23 published articles indexed in the Web of Science Core Collection (Clarivate analytics) with 136 citations. In addition, I have authored 2 chapters in prestigious publishing houses (Springer). I am the national representative of Romania in the European Hip Society and one of the most prestigious hip and knee arthroplasty surgeons.

I have always been deeply involved in the development of the university academic environment. Upon defending my habilitation thesis I wish to continue my professional course, apply new concepts and introduce new treatments in the local orthopedics and trauma clinical practice. I will also continue my research work and teaching activity, educating students and residents. The didactic activity carried out in any currently performing university center is obliged to be in a permanent adaptation to the requirements dictated by the free economic market. This lays the foundations for a training of students focused on current directions of development in areas of maximum interest for the progress of society such as medicine, biotechnology and computer science and telecommunications. Teachers are motivated to participate in research and market integration activities.

Through the didactic and scientific activity, I want to align myself with the strategy of our University pursuing interdisciplinary research, with the development of high performance human resources and increasing the national and international visibility of our university, so that the University of Medicine and Pharmacy "Victor Babeș" achieves its goal to be among the top 1000 Universities in the world in the shortest possible time, as well as to be among the First Rank Universities, involved in advanced research and education. In order to summarize the above, I want to promote a teaching activity continuously adapted to socio-economic requirements in constant change and in line with global trends, to meet the student and guide him in applying the fundamental principles of medical sciences in a clinical context.