

Board of examiners

Prof. dr. Pál Maurovich-Horvat

Department of Medical Imaging
Semmelweis University
Budapest, Hungary

Prof. dr. Tine De Backer

Department of Cardiology
Universitair Ziekenhuis Gent, Belgium

Prof. dr. Ives Hubloue

Department of Emergency Medicine
Research Group of Emergency and Disaster Medicine (ReGEDiM)
Universitair Ziekenhuis Brussel, Vrije Universiteit Brussel

Prof. dr. Sebastien Kindt

Department of Gastroenterology
Universitair Ziekenhuis Brussel, Vrije Universiteit Brussel

Prof. dr. Karl Martin Wissing

Department of Nephrology
Universitair Ziekenhuis Brussel, Vrije Universiteit Brussel

Prof. dr. Sabine Allard, Chair

Department of Internal Medicine
Universitair Ziekenhuis Brussel, Vrije Universiteit Brussel

Prof. dr. Bernard Cosyns, Promotor

Center for Cardiovascular Diseases (CHVZ)
Universitair Ziekenhuis Brussel, Vrije Universiteit Brussel

Prof. dr. Steven Droogmans, Promotor

Center for Cardiovascular Diseases (CHVZ)
Universitair Ziekenhuis Brussel, Vrije Universiteit Brussel



PhD in Medical Sciences
2021-2022

INVITATION to the Public defence of

Maria-Luiza LUCHIAN

To obtain the academic degree of

'DOCTOR OF MEDICAL SCIENCES'

**Cardiovascular Impact of Coronavirus Disease 2019
in Hospitalized Patients**

The public defence will take place on

Monday, 9 May 2022 at 4 p.m.

In Auditorium Piet Brouwer

Faculty of Medicine and Pharmacy, Laarbeeklaan 103, 1090 Brussel

and will be organised online, accessible through the following link:

https://gf.vub.ac.be/redirects/PhD_defense_Maria_Luiza_Luchian.php

Please contact the PhD candidate if you want to attend the public defence.

Summary of the dissertation

Coronavirus disease 2019 (COVID-19) is a new infectious, highly contagious respiratory disease, which evolved into a global pandemic with serious reverberations on all aspects of our lives. Current data show that COVID-19 infection is preponderantly a mild flu-like illness. However, extensive studies highlighted its significant impact on the cardiovascular system, mainly in patients with pre-existing cardiovascular diseases. More than a third of patients diagnosed with COVID-19 may develop myocardial injury during the course of the disease, which results in high morbidity and mortality. A considerable amount of effort is being expended into developing severity risk prediction algorithms for an improved COVID-19 diagnostic pathway and treatment. A key role in the management of patients with COVID-19 is played by early recognition of potential predictors of a worse outcome. In the first part of the thesis, we evaluated the role of cardiac troponin, as an early biomarker of cardiac injury, and its dynamicity in the prediction of worse prognosis in patients hospitalized with COVID-19. Moreover, we looked into easier and faster methods to extract additional relevant information on the prognosis of COVID-19 patients by measuring the coronary artery calcium score, using a simplified, reproducible and widely available method. Nevertheless, we continued to evaluate systematically discharged COVID-19 patients after one year following the acute episode for the presence of subclinical cardiac dysfunction, assessed by transthoracic echocardiography. Our results add to the present knowledge of COVID-19 infection and its cardiovascular impact and emphasize the importance of systematically cardiac mid and long-term follow-up of those patients.

Curriculum Vitae

Maria-Luiza Luchian was born on August 13, 1989 in Ploiesti, Romania. She graduated medicine at the University of Medicine and Pharmacy "Carol Davila" Bucharest, in 2014. During university, as a student, she actively participated in numerous medical conferences. Moreover, she participated in two student medical exchange programs organized in Hospital de Clinicas da Universidade Fderal do Tranguo Mineiro Uberaba, Brasil and the Department of Microbiology of Medical Faculty, Universitas Brawijaya, Malang, Indonesia.

In 2014, she obtained position 34 (905 points/931 points) at Romanian National Residency Exam. In 2015, she started her cardiology training at the University and Emergency Hospital of Bucharest, Romania. During the Cardiology Residency Program, she took part in research programs, including multicentric studies, having several presentations in various scientific conferences.

In November 2019, Maria-Luiza earned the Specialization in Cardiology Certification after obtaining the second position at the national evaluation, conducted at Emergency Clinic Institute for Cardiovascular Diseases "C.C. Iliescu", Bucharest, Romania. On January 2020, she started the non-invasive cardiac imaging and research fellowship at the worldwide known 'Centrum voor Hart en Vaatziekten', Universitair Ziekenhuis Brussel, Belgium under supervision of Prof. Dr. B. Cosyns and Prof. Dr. S. Droogmans. During the fellowship program, she had several scientific abstracts, focused on her PhD theme and as well on cardiovascular imaging modalities in other pathologies, at international cardiology meetings, e.g. European Congress of Cardiology 2020, 2021 and EuroEcho 2020, 2021. She published several articles related to her research, but as well to other cardiology subjects.