

To The Chairman of Scientific Jury
designated by Order No. R-109-239 / July 26, 2019
by the Rector of the Medical University-Varna

STATEMENT

by Assoc. Prof. Atanas Angelov Atanasov, MD, Ph.D

Educational Sector Cardiology, First Department of Internal Medicine,
Faculty of Medicine, Medical University Varna

Member of the Scientific Jury for the competition for the occupation of the academic position Associate Professor in the field of higher education Health and Sports, in the professional field Medicine and scientific specialty "Cardiology" for the needs of the Department of Propaedeutics of Internal Medicine, Faculty of Medicine at the Medical University of Varna and for the Clinic of Internal Medicine at the University Hospital St. Marina Varna, announced in the State Gazette no. 43/31.05.2019

By order No. R-109-239/26.07.2019 of the Rector of the Medical University Varna I was appointed to prepare a statement. The procedure for announcing the competition is in accordance with the requirements of the Law for the Development of the Academic Staff in the Republic of Bulgaria/05.05.2018 and with the Rules for the Development of the Academic Staff in the Medical University-Varna/29.10.2018. **Dr. Maria Stoyanova Dimova-Mileva** is the only candidate for the position.

1. Brief CVs data of the applicant

Dr. Maria Dimova graduated with honors from the Medical University of Varna in 2001. She has acquired a specialty in "Internal Medicine" in 2014 and "Cardiology" in 2018. She works as a physician at the University Hospital "St. Marina" in the period 2004-2005 and from 2008 to the present. She is assistant at the Department of Propedeutics of Internal Medicine at the Medical University of Varna since 2011. Dr. Dimova has additional professional qualifications in:

- Echocardiography - fundamental level
- Abdominal ultrasound

Dr. Maria Dimova is one of the few Bulgarian cardiologists, certified as specialists in transthoracic echocardiography by the European Association of Cardiovascular Imaging. Dr. Dimova was certified in 2016 after passing the exam successfully.

Dr. Maria Dimova received PhD in 2017 of the thesis *Prospective Follow-up Of Patients With Beta-Thalassemia Major For Cardio-vascular Status And Cardio-vascular Pathology*

2. Quantitative and qualitative evaluation of applicant's scientific research works

Dr. Maria Dimova has submitted for review 43 scientific papers:

1. **Monograph:** Maria Dimova. Anemia and cardiovascular changes; ISBN 978-619-221-202-5. 224 p.

2. *Full-text publications in referenced and indexed in a worldwide database of scientific information scientific journals* - 3

3. *Full-text publications in peer-reviewed scientific journals* - 22

4. *Full-text publications in a book* - 1

5. *Abstracts in referenced and indexed in a worldwide database of scientific information scientific journals* - 5

6. *Abstracts in peer-reviewed scientific journals* - 11

Dr. Dimova is the first author in 13 (30%) publications and accordingly the second author in 12 (28%). In 18 (42%) publications Dr. Maria Dimova is the third or subsequent author.

Citation: There are 10 citations of the scientific works of Dr. Maria Dimova in scientific publications with scientific review.

3. Scientific areas in which the applicant has mainly worked and where scientific publications are concentrated

- anemia and cardiovascular changes
- cardiovascular changes and evaluation of cardiac function in patients with Thalassemia major
- chronic kidney disease
- heart failure
- cardio-oncology

4. Scientific and applied contributions

The main part of Dr. Dimova's research is in the field of anemia and cardiovascular diseases, as well as cardiovascular impairment in patients with thalassemia major. In her monograph *Anemia and Cardiovascular Changes*, Dr. Dimova presents in details the importance of anemia as one of the most common comorbidities in patients with cardiovascular disease. Particular attention is paid to iron deficiency anemia and iron deficiency, which are most commonly seen in heart patients. The modern diagnostic and therapeutic methods are presented. The importance of anemic syndrome in ischemic heart disease, heart failure and rhythmic disorders is discussed in separate chapters. Some types of anemia that are less known to cardiologists are also been presented. For the first time in Bulgaria are described the cardiovascular impairment in patients with sickle cell anemia. Another important part of the monograph is devoted to cardiovascular changes in patients with a thalassemia major. The author not only summarizes what is known in the scientific literature till that moment, but also shares her personal experience of examining and following-up of patients with a thalassemia major. The main pathophysiological mechanisms of iron deposition in the heart and vessels are discussed. It is speculated that this is not the only mechanism by which pathological changes progress in the cardiovascular system. The contemporary diagnostic and therapeutic approaches in this patient population are presented.

Dr. Dimova presents cardiovascular pathology in patients with a thalassemia major in several publications. 38 patients with thalassemia major and age and gender matched controls are prospectively monitored and followed-up. Anthropometric and hemodynamic parameters are measured. The new

deformation techniques are used in addition to standard echocardiographic indices to evaluate cardiac function. The left ventricular ejection fraction in patients with thalassemia major is retained, but there are other pathological findings: increased left ventricular muscle mass, increased left ventricular volume indexes, decreased myocardial velocities, and decreased strain and strain rate values compared to controls. There are changes in the left atrium that are also found - greater indexed volume and reduced ejection fraction. Some of the patients with thalassemia major have elevated NTproBNP values. In these cases, the left atrial volume is significantly increased than patients with normal values of natriuretic peptides. Such a study among thalassemia major populations has not been conducted not only in Bulgaria but also in other countries. Dr. Dimova presents the pathogenesis, diagnosis and treatment of rhythm disorders in patients with a thalassemia major. There are data from state-of-the-art research in the field and also from the recommendations in the latest guidelines for the treatment of transfusion-dependent thalassemia.

The diagnostic and therapeutic approach to patients with heart failure and thalassemia is discussed thoroughly in some publications, including indications for helix therapy. Also, recommendations for severely impaired cardiac function during intensive care period are presented.

In another publication, Dr. Dimova discusses the renal changes in the thalassemia major patients, a problem of which is little known. There is a new diagnostic approach offered based on imaging and bio-markers for early-onset kidney damage.

The subject of several publications is the pathological changes occurring in the cardiovascular system in case of impaired thyroid function. Some lesser-known abnormalities, such as pulmonary hypertension in increased and decreased thyroid function, have been discussed, for which data in the scientific literature is currently scarce.

Other topics in Dr. Dimova's publications are dedicated to the problems of heart failure: administration of erythropoietin-stimulating agents; administration of SGLT2-inhibitors in diabetic patients with high cardiovascular risk; the use of bio-markers (classic as NTproBNP and some new, less known) for risk stratification.

The problem of cardiotoxicity in the use of various chemotherapeutics is particularly relevant nowadays. The mechanisms of onset of cardiac injury, as well as the available imaging diagnostic methods are presented in some of the publications.

4. Educational activity

Dr. Dimova teaches students in Medicine in English Language Program in Propaedeutics of Internal Medicine.

The workload for the last 5 years is as follows:

2014/2015 - 180 academic hours

2015/2016 г. – 174 academic hours

2016/2017 г. – 180 academic hours

2017/2018 г. – 156 academic hours

2018/2019 г. - 168 academic hours

In conclusion, Dr. Maria Dimova is a cardiologist, distinguished by her very good training and knowledge in Internal medicine. My personal opinion of Dr. Dimova's work date back to 2004, when she worked as a physician at the Cardiology Clinic at University Hospital St. Marina in Varna. She has very good theoretical background and also a she is a physician with great working capacity, good organizational skills and taking responsibility in difficult situations. Last but not least, Dr. Dimova is characterized by empathy for the patient, and this is something that we find less and less common these days. The scientific production and the workload of Dr. Maria Dimova, MD, fully comply with the requirements of the Regulations on acquiring scientific degrees and occupying academic positions of the Medical University Varna. This makes me confiden to propose to the Honorable Scientific Jury to vote positively for acquiring the academic position of Associate Professor to Dr. Maria Dimova in the specialty Cardiology for the needs of the Department of Propaedeutics of Internal Medicine at Medical University Varna.

Varna, 08.09.2019

Assoc. Prof. Atanas Angelov, MD, Ph.D



