

To: ESC Working Group on Coronary Pathophysiology & Microcirculation
The European Heart House
2035 Route des Colles - Les Templiers
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Mobility Travel Grant Final Report

Dear Members of ESC WG on Coronary Pathophysiology & Microcirculation,

Primarily, I would like to thank the Working Group on Coronary Pathophysiology & Microcirculation and European Society of Cardiology for awarding me the Mobility Travel Grant 2022. For the internship, I chose the 1st Cardiology Clinic, Hippokration Hospital, National and Kapodistrian University of Athens, Greece. It was a great honor and opportunity for me to work 6 weeks under the guidance of Director of 1st Cardiology Clinic - Professor Konstantinos Tsioufis, for which I am very grateful to him. Also, last but not least, I would like to thank the 1st Cardiology Clinic Team, for their help, openness and continuous support during this training, in particular Dr. Kyriakos Dimitriadis, Dr. Aggeliki Valatsou, Dr. Ioannis Andrikou, Dr. Ioannis Leontsinis, Dr. Maria Drakopoulou, Dr. Emmanouil Mantzouranis, Dr. Athanasios Sakalidis, Dr. Ioannis Doundoulakis, Dr. Panayotis K. Vlachakis.

The main area of Mobility Travel Grant research was myocardial infarction / ischemia with non-obstructive coronary arteries - MINOCA / INOCA. Generally, acute myocardial infarction is caused by atherothrombotic coronary artery disease (CAD) resulting from atherosclerotic plaque rupture or erosion with non-occlusive / occlusive thrombus. However, in some cases, in patients with acute coronary syndrome it is not identified obstructive coronary artery disease on coronary angiography or coronary computed tomography angiography. Furthermore, at the time of patient admission, the exact etiology of the ACS signs is unknown. This clinical entity is defined as MINOCA and has several positive diagnosis criteria. In clinical practice, the MINOCA often is considered as a clinical dynamic working diagnosis, that needs further investigations for a final etiological diagnosis work-up. It is important to note that MINOCA is more often registered as non-ST-elevation myocardial infarction (NSTEMI) (8-10%) than STEMI (2.8-4.4%).

Although there is likely overlap between INOCA and MINOCA, which appears to be increasingly described, our primary focus is INOCA, the non-MI syndromes. These stable patients

typically have symptoms of chest pain suspected to be angina and / or abnormal stress testing, in the setting of no obstructive CAD at coronary angiography.

For 6 weeks, together with colleagues from the 1st Cardiology Clinic, I examined patients who were admitted with symptoms of chest pain, took part in their examination - echocardiography and coronary angiography. In patients after the diagnosis of INOCA, coronary vascular function was assessed with the following parameters: coronary flow reserve, hyperemic microvascular resistance, microvascular resistance, etc. On top of that, during the initial diagnosis of INOCA, the following parameters was evaluated in all patients: heart rate variability which is a non-invasive way to recognize any dysfunction of the autonomic nervous system, muscle sympathetic nerve activity, evaluation of microcirculation through capillaroscopy which is a non-invasive tool for finding microvascular abnormalities beyond the coronary circulation, etc.

Moreover, during this internship period, we began to work on a literature review, the purpose of which is to study in detail the thromboembolic MINOCA causes. Immediately after the writing completion, we will publish this article in a high rank journal in the field.

In this way, Mobility Travel Grant from the ESC Working Group on Coronary Pathophysiology & Microcirculation was an excellent opportunity to strengthen the relationship between 1st Cardiology Clinic, National and Kapodistrian University of Athens, Hippokration Hospital, Greece and Grigore T. Popa University of Medicine and Pharmacy, Emergency Clinical Hospital "Sfântul Spiridon", Iasi, Romania. Working together on this project was a wonderful experience.

Sincerely,

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