

**"To the Chairman of the Scientific Jury,  
Determined by Order R-109-348/18.07.2023  
To the Rector of MU-Varna"**

## **STATEMENT**

by **Prof. Dr. DEYAN EMILOV YORDANOV, M.D., PhD**

Chief of the Clinic "Thoracic Surgery" - Military Medical Academy - Sofia  
On a doctoral dissertation for the award of an educational and scientific degree of  
**'Doctor'**

Professional field - 7.1. Medicine

Doctoral Program "Thoracic Surgery"

Author - **Dr. Katerina Marinova Marinova**

Form of doctoral studies: Regular form of education

Department of Surgical Diseases at MU-Varna

**Topic: "Advantages and disadvantages of different thoracoscopic approaches in the diagnosis and treatment of pleural effusions"**

Supervisor

Prof. Dr. Rumens Nikolov Nenkov, M.D., PhD

### 1. General Presentation of the Doctoral Candidate's Procedure

The presented set of materials in paper and electronic format is in accordance with the Procedure for Obtaining the Academic and Scientific Degree of 'Doctor' at MU-Varna, the Regulations of MU-Varna, and includes the following documents:

- Curriculum Vitae in European format;
- Decree of enrollment with the right to defend;
- Doctoral dissertation;
- Abstract;
- List of scientific publications on the topic of the dissertation;

### 2. Biographical Information

Dr. Katerina Marinova Marinova was born on August 4, 1986, in Haskovo. In 2005, she graduated from a high school in Haskovo. She completed her higher medical education in 2012 at MU-Varna. Since 2013, she has been working at UMBAL "St. Marina" - Clinic of Thoracic Surgery. In 2019, she obtained a specialization in thoracic surgery, and in 2023, she further specialized in general surgery. Since 2014, she has held the position of Honorary Assistant at the Department of Surgical Diseases - MU-Varna. From 2015, she was selected as an Administrative Assistant in the Department of Surgical Diseases.

She is proficient in written and spoken English and German.

### 3. Relevance of the Topic

The doctoral dissertation focuses on a current issue in the field of thoracic surgery - the choice of approach in the minimally invasive treatment of pleural effusions. Various approaches are known, and the correct selection depends on various factors related to the patient's condition and the type of effusion, as well as the skills and experience of the operator.

The presented dissertation is composed of 125 pages and is structured as follows:

- Abbreviations Used - 2 pages
- Introduction - 2 pages
- Literature Review - 38 pages
- Aim and Objectives - 1 page
- Materials and Methods - 10 pages
- Results - 18 pages
- Discussion - 34 pages
- Conclusion - 2 pages
- Summaries - 1 page
- Contributions - 1 page
- Scientific Publications Related to the Topic - 2 pages
- Bibliography - 10 pages, including 228 references, with 10 in Cyrillic and 218 in Latin script.

The dissertation work is supplemented with 10 diagrams, 18 tables, and 20 photographs.

### 4. Literature Review

The literature review is composed of 38 pages. It extensively covers the anatomy and physiology of the pleura, the pathophysiology of pleural effusions, their classification, clinical presentation, and diagnostic methods. Understandably, the emphasis is placed on treatment methods and their evolution.

The review holds substantial informative value, with the doctoral candidate demonstrating a high level of awareness regarding the issue.

The aim of the doctoral dissertation and the objectives are clearly and precisely formulated, and the fulfillment of the objectives logically leads to achieving the aim.

### 5. Materials and Methods

Over a 10-year period, a total of 325 patients with pleural effusions were processed and examined. This substantial number convincingly suggests statistical significance in the results and conclusions drawn. The patients were categorized by age, gender, and types of pleural effusions.

The doctoral candidate primarily reviews three types of approaches for video-assisted thoracoscopic treatment of these patients. The protocol for postoperative patient follow-up to monitor the effectiveness of the overall treatment is described in detail.

Additionally, the statistical methods applied for analysis are also discussed.

## 6. Results and Discussion

This constitutes the main part of the doctoral dissertation - spanning 52 pages. It's worth noting the excellent visual representation of the obtained results. All tables and diagrams are presented in an illustrative and informative manner. An interesting fact is that men with pleural effusions are nearly twice as common as women. As expected, the most frequent primary causes of malignant effusions are lung and breast carcinomas. The indications and contraindications for surgical treatment are correctly identified.

I question the conclusions drawn regarding the dependency of the postoperative drainage duration on the number of ports. It's more plausible that the duration depends on the nosological unit - as earlier in the dissertation, it's mentioned that the choice of approach is primarily determined by the diagnosis itself.

In the "Discussion" chapter, significant aspects of diagnosis, preoperative preparation, assessment of operative risk, selection of operative approach, and surgical access for the treatment of patients with pleural effusions of various etiologies are thoroughly examined.

It would be beneficial, when studying parameters of the results from surgical treatment with the three types of video-assisted thoracoscopic approaches, to investigate standardized patient groups with uniform conditions - for instance, those with the same diagnosis. Consequently, the obtained average operative time, hospital stay, and intraoperative complications would likely be influenced to a greater extent by the nature of the disease rather than the number of thoracoports.

The advantages and disadvantages of the three types of thoracoscopic approaches are meticulously discussed.

Of interest is the proposed diagnostic-therapeutic algorithm, which would be beneficial not only for surgeons but also for physicians and anesthesiologists.

## 7. Conclusions and Contributions

Dr. Marinova presents 7 conclusions, which are logically derived and directly stem from the presented results.

As contributions to the doctoral dissertation, I acknowledge:

### **1. Scientific and theoretical contributions:**

- The analysis of the advantages and disadvantages of different thoracoscopic approaches.

### **2. Practical contributions:**

- The implementation of 3 types of thoracoscopic approaches into practice, with indications for their application.

- The proposal of a diagnostic-therapeutic algorithm for patients with pleural effusions of various etiologies, which could be useful for professionals from different specialties.

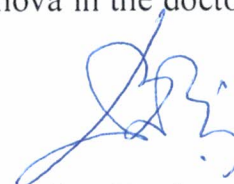
Dr. Marinova has 3 scientific publications on the topic, with 1 of them being in English. Additionally, she has participated in 5 scientific congresses and conferences.

The presented abstract adheres to the requirements and effectively reflects the key results achieved in the study.

## 8. Conclusion

The presented doctoral dissertation contains significant scientific results that constitute an original contribution, primarily for surgical practice. These results meet all the requirements of the Law for the Development of the Academic Staff in the Republic of Bulgaria, as well as the Regulations for the Application of the Law and the Regulations of MU-Varna. In light of the above, I confidently provide a positive evaluation of the conducted research and recommend to the esteemed scientific jury to confer the educational and scientific degree of "Doctor" upon Dr. Katerina Marinova in the doctoral program of "Thoracic Surgery."

09.08.2023, Sofia



Prof. Dr. Deyan Emilov Yordanov, M.D., PhD