

Opinion

From Assoc. Prof. Dr. Valeri Lyubenov Gelev, PhD

**Head of the Cardiology Clinic
of Acibadem City Clinic UMHAT Tokuda EAD**

Regarding a dissertation thesis for the acquisition of the educational and scientific degree "PhD" in the field of higher education 7. Health care and sports, professional direction 7.1. Medicine, PhD program "Angiology".

Topic: „ATHEROSCLEROSIS OF CAROTID, CORONARY AND PERIPHERAL ARTERIES IN PATIENTS WITH DEGENERATIVE AORTIC STENOSIS"

Author: Dr. Desislava Bojidarova Bojadgieva-Marincheva

Form of doctoral studies: Independent preparation

Scientific unit: Clinic of angiology

Research supervisor: Prof. Dr. Milena Staneva Staneva, PhD.

Prof. Dr. Sotir Todorov Marchev, DSc

1. General presentation of the procedure and the PhD student

In writing the dissertation, the requirements for the procedure in terms of thesisability, choice of topic, internal defense and selection of the Scientific Jury were followed. The dissertation was discussed and proposed for defense by the Extended Scientific Collegium of the Angiology Clinic at Acibadem City Clinic UMHAT Tokuda EAD. At a meeting of the Scientific Council of Acibadem City Clinic UMHAT Tokuda EAD (Protocol № 49/01.11.2023) № 15-01-516/24.11.2023 of the Executive Director and the Procurator of the hospital, I was appointed as an internal member of the Scientific Jury in connection with the dissertation of Dr. Desislava Bojadgieva. I am determined to submit an Opinion.

No plagiarism was detected from the submitted StrikePlagiarism.com Metadata reference.

I declare that I have no conflict of interest with the author of the thesis.

Dr. Desislava Bojadgieva was born on 03.09.1978 in Pleven. In 1997 she graduated the Foreign Languages High School in Pleven. In 2003 she graduated in medicine at the University of Medical Sciences in Pleven. From 2008 to 2012 she was a specialist and assistant professor in Cardiology at the University Hospital "Dr. Georgi Stranski" in Pleven. In 2012 she acquired a specialty in Cardiology. From 2017 to 2020 she

specializes Angiology at Ajibadem City Clinic Tokuda Hospital, Sofia and in December 2020 she acquired a specialty in Angiology. In 2019 she obtained a certificate for VSD "Ultrasound Vascular Diagnostics" from MU - Sofia. From 2017 to 2020 she worked at the Heart and Brain Hospital in Pleven as an angiologist and cardiologist at the Vascular Surgery Clinic. From 2020 to the present, she has worked in an ambulatory practice.

She is a member of the Bulgarian Society of Angiology and the Society of cardiologists in Bulgaria

2. Topical relevance

The topic of the thesis is extremely topical. Aortic stenosis and atherosclerosis are two socially significant diseases with similar risk factors for their occurrence. Many researchers are looking for common pathogenetic mechanisms between the two diseases in order to improve prevention and prognosis.

In this regard, the thesis, with the recommendations made, is relevant from a practical point of view.

3. Knowledge of the problem

The PhD student knows the state of the problem and evaluates the literature creatively.

4. Methodology of the study

The chosen research methodology allows achieving the set goal and obtaining an adequate answer to the problems solved in the dissertation.

The dissertation of Dr. Bojadgieva is written in 117 pages, illustrated with 20 figures and 59 tables. It is properly structured and includes 9 sections: Abbreviations and symbols used - 1 page; Introduction - 1 page; Literature review - 26 pages; Aim and objectives - 1 page; Material and Methods - 11 pages; Own results - 41 pages; Discussion - 11 pages; Conclusion - 1 page; Inferences - 1 page; Bibliography - 19 pages; The bibliography contains 182 references, of which 3 in Cyrillic and 179 in Latin.

In the introduction the problem is well formulated and the aim of the thesis is justified.

The literature review is focused and thorough and covers all aspects of the problem and outlines the outstanding issues. The main mechanisms and risk factors for the occurrence of degenerative aortic stenosis and its similarities with atherosclerosis of different localization are discussed.

The aim of this dissertation is to evaluate the presence and severity of atherosclerosis of carotid, coronary and peripheral arteries in patients with degenerative aortic stenosis in order to develop a management algorithm for prevention and improved prognosis. The objective is well formulated in line with the

thesis topic and the literature review presented. The set tasks, 6 in total, are quite sufficient and are fully realized in the dissertation.

In the section "**Materials and methods**" are described in detail the 132 patients, men and women, aged from 48 to 92 years, studied in the period 2018 - 2019. The studied patients are divided into two main groups: Group I - Patients with aortic stenosis - 91 (average age 73 years), divided into 3 subgroups: 1. High grade AS – 46 patients, 2. Mid-stage AS- 16 patients 3. Low-grade AS - 29 patients; Group II - control - 41 patients (mean age 72 years) - patients with risk factors and clinical manifestation of atherosclerosis but without congenital or acquired aortic malformation. The study was prospective in design for the period, with an analysis of total mortality after the second year of completion.

For the statistical processing of the data appropriate methods and specialized statistical package SPSS (Statistical Package for the Social Sciences) version 16.0 were used, which guarantees the reliability of the results obtained.

Results and Discussion:The results obtained are analyzed in detail and meet the aim and objectives of the study. It should be noted that they are very well illustrated and adequately analysed with appropriate statistical methods.

Conclusions and contributions: Based on the results obtained, Dr. Bojadjeva logically draws several conclusions that are consistent with the set tasks. The more important of which are: 1. The most common clinical manifestation of atherosclerosis is in patients with mild aortic stenosis. 2. There was no statistically significant association between the presence of a specific risk factor and aortic stenosis. 3. Risk factors for atherosclerosis are similar to those for aortic stenosis, but have no relationship to disease progression and the degree of valvular stenosis. 4. The number of risk factors in patients with aortic stenosis did not change the average number of arterial pools affected by atherosclerosis. 5. High-grade AS is protective for MSDs - the presence of severe AS reduces the risk of developing MSDs by a factor of 2.9.6. Patients with AS resemble patients with atherosclerotic disease in their involvement of the abdominal aorta.

Based on the findings, a management algorithm for the diagnosis of aortic stenosis was developed. The contributions are 6 original, scientifically applied.

6. The abstract is written in 58 pages, meets the requirements and fully reflects the results presented in the thesis. In a clear and reader-friendly way, it gives an overview of the overall design, methods, results and main conclusions in a summarized form

7. Assessment of publications and personal contribution of the PhD student

The PhD student has applied 2 publications in national journals and 7 scientific communications in national and international scientific forums, 2 of which with IF. In all the attached publications Dr Bojadjeva is the first author, and in 1 she is an independent author. This scientific activity is sufficient to show that the PhD student is

consistent in his/her scientific activity and meets the national minimum requirements for the educational and scientific degree "PhD".

CONCLUSION

In the PhD Thesis there are scientific-theoretical and scientific-applied results representing an original contribution to science, expanding our knowledge in the field of multifocal atherosclerosis and cardiology. It has been created in a strictly scientific style. It meets all the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria (LDASRB), the Regulations for the Implementation of LDASRB and the Regulations of "Acibadem City Clinic UMHAT Tokuda" EAD. The presented materials and dissertation results completely meet the specific requirements adopted in regard with the Regulations of "Acibadem City Clinic UMHAT Tokuda" EAD for the application of LDASRB.

Dr. Desislava Bojadgieva is a specialist in cardiology with extensive 11 years of experience and in the area of angiology 3 years of experience. Actively participates in research work. She demonstrates qualities and skills for independent conduction of scientific research.

Due to the above, I give my positive assessment and strongly recommend to the members of the Scientific Jury to positively evaluate the dissertation work "Atherosclerosis of carotid, coronary and peripheral vessels in patients with degenerative aortic stenosis" and to award Dr. Desislava Bojidarova Bojadgieva - Marincheva Scientific and educational degree "PhD" in the field of Higher Education 7. Health care and sports, professional direction 7.1. Medicine, doctoral program "Angiology".

10.01.2024

Sofia

Prepared the opinion:

Assoc. Prof. Dr. V. Gelev, Ph.D.