

STATEMENT

by Prof. Plamen Georgiev Panayotov, MD, Ph.D
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On dissertation for the award of PhD

In the field of higher education 7. Health and Sport, professional field 7.1. "Medicine", for scientific specialty and doctoral program "Cardiology". Confirmed members of the Scientific Jury according to the Order No. 11-07-32#1 /19.04.2022 of the Governor of the University Hospital Ajibadem City Clinic, Sofia. Sofia

Subject:

"ENDOVASCULAR TREATMENT IN TYPE "A" AND TYPE "B" AORTIC DISSECTION

For the acquisition of the educational and scientific degree "DOCTOR" of Dr. Zoran Jovan Stankov,

Scientific organization. Faculty of Medicine, Department of Medicine, Medical University of Sofia

Scientific supervisor – prof. Ivo Petrov, MD, PhD

Candidate's career profile.

Dr. Zoran Stankov graduated in medicine in 2007 at Medical University - Sofia

- He obtained his specialty in Cardiology in 2015.

- Acquired a specialty in Angiology in 2020.

- He is a member of a number of our and foreign professional and scientific organizations and societies, such as the Bulgarian Medical Association, Bulgarian Society of Cardiology, European Society of Cardiology, Bulgarian Society of Endovascular Therapy.

- Author of more than 45 scientific publications in Bulgarian and foreign journals.

Dr. Stankov is an established physician with excellent theoretical training, extensive clinical experience and broad interests in the field of interventional cardiology. He actively participates in scientific congresses and symposia in the field of cardiology and endovascular treatment.

In the introduction the dissertant justifies the importance of the problem of diagnosis and treatment of Stanford type A and type B aortic dissections.

Relevance of the topic Aortic dissection is the most common manifestation of acute aortic syndrome and often requires urgent intervention. The high mortality rate, about 1% per hour, or about 50% per 48h requires urgent life-saving diagnostic clarification and immediate treatment.

The gold standard in the treatment of Stanford type A aortic dissection is cardiac surgery, provided that there is no prohibitively high operative risk. In Stanford type B aortic dissections, the gold standard in treatment is endovascular therapy when complicated dissection is involved. With advances in technology and the introduction of endovascular therapy for aortic dissection (AD), rapid, safe and effective treatment is possible. Initially, this method was used only as an alternative to surgical treatment in patients with very high operative risk and type B aortic dissection. Over the years, sufficient evidence has accumulated for this particular treatment to even become the gold standard in the Stanford type B aortic dissection patient group. The efficacy and safety of endovascular treatment of type A and type B aortic dissection is extremely relevant, with a major scientific and practical contribution.

General description of the materials presented.

The dissertation is presented in 179 pages, structured in 8 main sections with additional points in some of them. The main sections are: Introduction - 1 p.; Literature review - 53 p.; Aim and objectives - 1 p.; Material and methods - 18 p.; Results - 38 p.; Discussion - 12 p.; Exemplary cases of endovascular treatment of aortic dissection - 6 p.; Conclusions - 3 p. Bibliography -23 p. includes 187 titles of foreign authors. The dissertation is illustrated with 41 tables and 68 figures.

The literature review

It is written very competently and shows an excellent knowledge of the available information on the problem. The bibliography includes 187 titles. The extensive literature is thematically synthesized, commented on with skill and criticality, tracing the development and results of endovascular treatment in type A and type B aortic dissection. Other treatment modalities, both surgical ones and medical therapy, are also described. Possible hybrid methods of treatment of aortic dissection are described. Unresolved issues are well illustrated and systematized at the end of the literature review. The author's method of dividing the literature review into subsections is very impressive.

Aim and objectives

The main aim of the thesis is clearly defined: to establish the effectiveness of endovascular treatment in type A and type B aortic dissection

In relation to the main aim, 6 specific objectives are presented, one of which has 3 sub-objectives.

Clinical material and methods

The dissertation included 70 patients who underwent endovascular treatment of type A and type B aortic dissection. The number of patients in the type B dissection group was sufficient to obtain reliable and practically significant results.

The Materials and Methods section is well presented with separate sections for the participants included, the main steps in the implantation protocol, the statistical methods used, and the imaging studies used during the course of the study. Criteria for procedural success are clearly and accurately described.

Results and discussion

The results are presented consistently, comprehensively, and visually. Comparative results are presented initially according to type of aortic dissection and subsequently comparing the two types. The results are well structured and separated according to major demographic, anatomic, and procedural features, and a similar analysis by group as well as a comparative analysis is performed. For the majority of outcome categories, competent commentary and comparison of results by patient group was made between the research paper and results from other studies cited in the literature review.

It should be noted that the study is the personal work of the author and his team.

Attention is paid to the group of patients who had initial surgical treatment, and the indications for subsequent endovascular treatment are described. Malperfusion syndrome and persistent dissection may be noted as more important. This allows a complete characterization of the comparative methodologies in the selected group of patients. These are discussed in accordance with current opinion and are skilfully compared with the available literature evidence, leading to clear conclusions and recommendations for the use of the information obtained.

The 14 **conclusions** are clearly defined and are consistent with the stated aim and objectives.

Contributions according to the author: 13 contributions, which are of theoretical and scientific-practical value. Contributions of scientifically applied and original character - I consider as significant contributions 1, 2, 3, 5, 7, 8, 9, 11, 13. Contributions of a confirmatory nature - I accept as significant contributions 4, 6, 10, 12.

The theoretical value of the present work is related to a systematic analysis of the results of endovascular treatment of type A and type B AD in Bulgaria in a series of 70 consecutive patients, and this experience is compared with the world experience. The protocol of endoprosthesis implantation with femoral access and closure of the vascular access with percutaneous closure devices and the clinical results of its application are described in detail. For the first time in Bulgaria, a large study in the endovascular treatment of type A and type B AD was conducted. Numerous demographic, anatomical and procedural features of these patients are described. For the first time in Bulgaria, the incidence and methods of endovascular treatment of malperfusion syndrome are investigated.

It is demonstrated with our own material compared with the literature data that the modern treatment of type A and B aortic dissection is complex - it includes both endovascular treatment alone and combined primary or secondary hybrid treatment - combined surgical and endovascular therapy. The place of cardiac surgery as the gold standard in the treatment of type A AD has been correctly described.

Of great practical value is the detailed description of both the implantation protocol and the methods of treatment of the malperfusion syndrome in type A and type B AD, both after surgical treatment and after endovascular treatment.

The abstract is 114 pages, prepared according to standards and correctly presents the main problems and results discussed in the thesis.

In connection with the dissertation, 13 articles have been published in periodical scientific journals. 9 papers and contributions have been presented at international conferences and Bulgarian scientific forums related to the topic of the study.

Critical notes and recommendations.

There are no references published by Bulgarian authors.

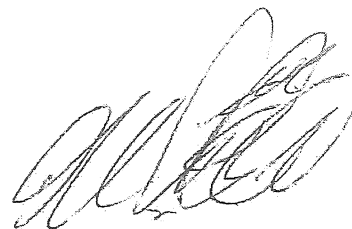
I believe that the concepts of aortic dissection and dissecting aortic aneurysm should be distinguished, which we encounter significantly less frequently.

In **conclusion**, I believe that the dissertation work presented by Dr. Zoran Jovan Stankov on the topic "ENDOVASCULAR TREATMENT OF TYPE "A" AND TYPE "B" AORTA DISSECTION" has all the qualities and **MEETS THE REQUIREMENTS** and the Regulations for the Acquisition of Scientific Degrees and Academic Positions at Ajibadem City Clinic University Hospital. I give my **POSITIVE** evaluation and propose the Honourable Scientific Jury to vote positively for the award of the degree of Doctor of Education and Science to Dr. Zoran Stankov.

Varna

16 May 2022

Signature:



Prof. Plamen Panayotov, MD, PhD, FETCS