

OPINION

by Prof. Vasil Dimitrov Velchev, MD

Elected as a member of a scientific jury, approved by order № 11-03-297# 5 от 29.04.2022 г. At the
Manager and Procurator of Acibadem City clinic UMBAL

Subject: Defence of the dissertation on the topic:

"ENDOVASCULAR TREATMENT IN TYPE "A" AND TYPE "B" DISSECTION OF THE AORTA"

for awarding a doctoral degree
to Zoran Stankov, MD

Scientific Organization: Acibadem City Clinic UMBAL Professional Department 7.1.
Medicine

Dr. Stankov is an established doctor in the field of cardiology, interventional cardiology and endovascular therapy, with excellent theoretical training, extensive experience and numerous clinical interests in the field.

Structure of the dissertation work

The dissertation work contains 179 printed typewriting pages, richly illustrated with 68 figures and 41 tables that inform enough about the problems under consideration.

It is structured as follows:

Literary review – 53 pages

Goals and objectives – 1 page

Materials and methods – 18 pages

Results – 38 pages

Discussion – 37 pages

Examples of endovascular treatment of aortic dissection – 6 pages

Conclusions – 3 pages

Bibliography – 23 stransient

Prerequisites and status of the problem

The topic, purpose, and methodology of the study, as well as the scientific and applied significance of the results obtained determine the actuality and thesis of the thesis project. Dissection of the aorta is one of the deadliest diseases and is an emergency condition whose mortality is about 1% per hour in the first 48 hours. Age is a risk factor, with about 75% of aortic dissections observed in patients between 40 and 70 years old, the majority being in the range of 50-65 years. With the progressive prolongation of life expectancy, there is an increase in the frequency of aortic dissection in both developed and developing countries. Currently, there is no universal method of treatment of aortic dissection, which makes it an extremely important problem for modern cardiology and cardiac surgery. With advances in technology and the introduction of endovascular therapy in aortic dissection (AD), it is possible to treat quickly, safely and effectively. Currently, the endovascular treatment of complicated AD type B is the gold standard.

All this makes the topic of analysis of the effectiveness and safety of endovascular treatment of aortic dissection type A and type B extremely relevant, with great scientific and practical contribution.

Literary review

It is written competently and shows the excellent methodical and theoretical preparation of the author. The rich literary material is purposefully synthesized, analysed deeply with maturity and criticality and tracks the development and results of endovascular treatment in AD type A and type B. The unexplained problems are well illustrated and commented on. Great attention is given to the endovascular treatment of AD and that of the malperfusion syndrome. The latter is an accompanying not very few of the patients with AD and represents the outstanding problems. The objective and tasks of the dissertation work are formulated clearly, accurately and with a pronounced practical focus.

The materials used show a good knowledge by the dissertant of the results achieved. The

citations are accurate and correct. In general, the literary review shows an in-depth preliminary preparation of the author on the problem studies, it is written in good Bulgarian language with clear sentences and accurate thought.

I accept the presented author's report, which reproduces the dissertation work well and sufficiently.

The purpose and tasks of the dissertation work are precisely formulated and correspond to the title. Six tasks of a specific nature are included, the performance of which corresponds to the main objective, with a view to protecting the built hypothesis in the dissertation work. The tasks assigned require their own contribution from the author.

Goals and tasks. Material and methods

Clearly defined the main purpose of the dissertation work: to establish the effectiveness of endovascular treatment in type A and type B dissection of the aorta. In relation to the main objective, 6 specific tasks are also presented, one of which has 3 sub-points.

The dissertation work includes 70 patients who have undergone endovascular treatment of aortic dissection type A and type B. The number of patients is sufficient to obtain reliable and practically significant results. In patients, endoprosthesis implantation was conducted in the period 2014-2018. The remoteness in the timing of the initial treatment and the published results is related to the high follow-up of patients. The average follow-up was 59 months, the longest being 96 months and the shortest 33 months excluding patients with one-month mortality.

The materials and methods section is well represented and separated in parts: the participants involved, the main steps in the implantation protocol, the statistical methods used, and the imaging studies used in the course of the study. The criteria for procedural success are clearly and precisely described.

Particular attention is paid to the imaging studies used to make the diagnosis, detailing the advantages and disadvantages of each of them.

The statistics were processed using the specialized statistical package for the Social Sciences version 20.0. The following statistical methods are used: descriptive statistics, Colmogorov-Smirnov test, Hee square test, T-test in two independent groups, non-parametric test of Mann-Whitney.

Results and discussion

The results are presented consistently, comprehensively, and visually. The comparative results are presented initially according to type of aortic dissection and then a comparison

between the two types. The results are well structured and divided by basic demographic, anatomical and procedural characteristics, with a similar analysis by group, as well as a comparative analysis. There have been extremely scientific and practical comparisons representing the essence of the dissertation work. As more important can be noted:

- Comparison in the demographic characteristics of patients with AD type A and type B, as well as their risk profile
- Comparison in the anatomical characteristics of AD in patients with AD type A and type B, especially the frequency of involvement of a number of major arterial vessels, as well as malperfusion syndrome
- Comparison in procedures characteristics of patients with AD type A and type B, frequency of re-intervention, hybrid procedures, initiative surgery and other. There is no doubt that the study is a personal work of the author.

The presented 14 conclusions and 13 contributions from the author characterize the results obtained in detail. They are clearly and precisely formulated and are the result of precise execution of the assigned tasks and purpose of the dissertation work. This makes the dissertation work of doctor Stankov with a pronounced scientific-theoretical and scientifically applied aspect.

In conclusion, I believe that the dissertation work presented **by Dr. Zoran Stankov on the topic "Endovascular treatment IN TYPE "A" AND TYPE "B" DISSECTION OF THE AORTA"** has all the qualities and meets the requirements of the Law on development of academic staff in the Republic of Bulgaria and the Rules of Procedure for acquiring scientific degrees and holding academic positions of "Acibadem City Clinic UMBAL", **FOR AWARDING THE SCIENTIFIC DEGREE "DOCTOR", which is why** I strongly give a **POSITIVE** assessment and recommend to the Dear Members of the Scientific Jury to positively evaluate the dissertation work "Endovascular **TREATMENT IN TYPE "A" AND TYPE "B" DISSECTION OF THE AORTA** " for the award of a scientific degree "Doctor" to Dr. Zoran Jovan Stankov in the medical field.

Sofia, 07.05. 2022

Prof. Vasil Dimitrov Velchev

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