

STATEMENT OF OPINION

by **Prof. Dr. Rosen Dimov, PhD**

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on

thesis on "**Wound infections after open heart surgery**" in the scientific specialty

Cardiovascular surgery: 03.01.49

of **Dr. Hristo Angelov Stoev** - PhD student at the Department of Cardiovascular Surgery -
MU - Plovdiv

for awarding educational and scientific degree "Doctor"

Supervisor: **Prof. Dr. Zaprin Vazhev, PhD**

Biographical data

Dr. Hristo Angelov Stoev was born on October 1, 1987 in Plovdiv. He graduated from the English Language School Plovdiv. In 2012 completed his higher education in medicine at the Medical University - Plovdiv. Since 2016 is an assistant in the Department of Cardiovascular Surgery at MU - Plovdiv. 2020 - recognized specialty in cardiac surgery. He is currently a resident in cardiology.

Actuality of the topic

The thesis "Wound infections after open heart surgery" is dedicated to an important problem in cardiac surgery. Post-sternotomy infections lead to severe deterioration in the quality of life of the patients, and are associated with high in-hospital mortality and huge financial costs. Early detection and adequate treatment are extremely important, but the most important aspect is the application of preventive measures concerning these complications. The dissertation systematically presents data on the epidemiology, diagnosis, treatment and prevention of wound infections after open heart surgery, covering a large period of time and examining a large population of patients. The set research objective and the resulting tasks correspond to the title and content. All this defines the scientific paper as very relevant in scientific and practical terms.

Knowledge of the problem

Given the number of patients included in the studies, the application of prophylactic measures and the search for predictive biomarkers for wound infections, the development of an algorithm for diagnosis and treatment of these complications, and a thorough literature review, it can be concluded that dr. Stoev is acquainted in great detail with the subject.

Characteristics and evaluation of the dissertation

The presented dissertation is well structured and meets all criteria. The individual sections are well balanced. It is written on 207 standard pages and is illustrated with 36 tables, 55 figures and 35 diagrams. The main text contains:

1. Title page and content with abbreviations used - 3 pages.
2. Literature review - 65 pages;
3. Aim and tasks - 1 page;
4. Clinical material and methods - 9 pages;
5. Conducting the research and results - 52 pages;
6. Discussion - 46 pages;
7. Conclusions and contributions - 4 pages;
8. Bibliography - 19 pages.

The bibliographic reference covers 360 literary sources, of which 8 in Cyrillic and 352 in Latin.

The literature review thoroughly analyzes the data on epidemiological, diagnostic and therapeutic prognostic factors, as well as the main tasks facing each surgeon. Particular attention is paid to prevention and biomarkers associated with the inflammatory process, which point to the essence of the current scientific study.

The goal is correctly and precisely formulated and corresponds to the topic of the dissertation. *The tasks* - 7 in number, are short, in accordance with the set goal and semantically differentiated.

The clinical material and the methods are correctly and precisely selected for the fulfillment of the set goal and tasks. The chapter is divided semantically, with separate consideration of superficial wound infections, sterno-cutaneous fistulas, deep wound infections, the application of prophylactic measures, testing for predictive biomarkers. For statistical processing, tests for modern and accurate statistical analysis are applied.

The clinical material and the methods used allow to formulate accurate and reliable conclusions and to outline the contributions of the dissertation.

In the chapter "*Results*" Dr. Stoev presents his own data from the studies. The description of the results corresponds to the set tasks and is supported by rich photographic material. The positive result from the application of prophylactic measures for complications of the operative access is presented, a biomarker with predictive potential - procalcitonin is identified.

In the chapter "*Discussion*" the author summarizes the achieved results and makes a comparison between his own experience and that of other authors.

The conclusions are 12 in number, correspond to the section of the tasks and reflect the obtained results.

The presented dissertation ends with the formulation of 9 *contributions*. Most of them are unique due to the fact that they were established and studied for the first time in the country. The main practical contribution is the preparation of a comprehensive program for prevention of wound infections, as well as an algorithm for diagnosis and therapeutic behavior in superficial and deep poststernotomy infections.

Publications related to the dissertation

Dr. Stoev has 3 publications in connection with the dissertation - 2 in Bulgarian journals and 1 - in a foreign edition. He has participated with scientific reports in a total of 5 scientific forums. 4 of them are in national and 1 - in an international scientific forum. All these materials are related to the thesis.


The abstract is presented on 72 standard pages. Summarizes well the structure of the scientific work. The purpose and tasks are clearly and specifically stated. The results are clearly presented with a sufficient number of figures and tables. The abstract contains the most important research, conclusions and contributions. It meets all the requirements of the relevant regulations and reflects the main results achieved in the dissertation.

Conclusion

As a conclusion I believe that Dr.Stoev has written a PhD thesis in accordance with national legislation and university regulations. Hence, hereby I am giving my positive vote to present Dr.Stoev with an educational and scientific degree "PhD".

Plovdiv

15.05.21


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