

To whom it may concern

January 15, 2021

REVIEW REPORT

for the dissertation of
Vladimir Vladimirovich Potapov

Topic: «Changes of tensiometric and rheometric blood serum parameters in the peri-operational period in patients who underwent cardiac operations»,

submitted for the degree of Candidate of Medical Science, specialty 14.01.20 -
Anesthesiology and Intensive Care.

The dissertation performed by Vladimir Vladimirovich Potapov refers to a very innovative research and is devoted to a solution of the very actual and socially significant issue. Cardiovascular diseases are still responsible for morbidity in many countries. The annual morbidity rate for cardiovascular system diseases reaches 17 million persons. According to data from the Centers for Disease Control and Prevention the average life expectancy would be 10 years longer should the cardiovascular diseases be not so widely spread. They lead to a long-term disability of the adults and do cause the huge economic expenditures to be made.

The dissertation of V.V. Potapov is an individual complete academic paper where the state of the art of the patients' conditions diagnostic methods is applied using the data of variation of the surface tension and dilatational viscoelasticity. The paper is

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based on a precise design of the research using the current classifications of the patients' severe condition in the perioperative period.

The trustworthiness of the performed research is not doubtful. Extent and scope of a sampling (patients from 3 groups) and the control group as well are deemed representative and correct. Novel physical and chemical research methods based on physical and colloid chemistry and fundamental concepts of phase boundaries are used. The processing of obtained results has been performed using statistical analysis methods.

Obtained data have both theoretic and practical value. For example, the early diagnostic method to determine the probability of a development of the chronic cardiac insufficiency has been elaborated and introduced into the clinical practice. The new chronic cardiac insufficiency diagnostic techniques have been patented (2 patents). Additional factors have been also established that vary in blood serum according to the tensiometric and rheometric data; they are evidences of the development of the acute myocardial infarction in an early post-operative period (after a cardiac operative treatment at an artificial blood circulation).

The application of suggested diagnostic techniques enabled individualization of the treatment being performed, improvement of its results, and can find a broad use not only among the anesthesiologists and intensivists but among other clinical medical practice doctors. Sufficient scope from dissertation content has been used in press papers and presentations held at various scientific forums including international level (1 article in the journal from Scopus List).

The text of dissertation synopsis does contain very few print errors. There are no comments regarding to form and content of the dissertation synopsis. Both the conclusions and the practical recommendations do consistently arise from the main content of the paper.

In my opinion, originality, scientific novelty and practical significance of the V.V. Potapov's dissertation entitled "Changes of tensiometric and rheometric blood serum parameters in the peri-operational period in patients who underwent cardiac operations"

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complies with requirements of Para.2.1 of the Provision of conferment of the science degrees applicable to the candidate's dissertations and its author deserves the conferment of the degree of Candidate of Medical Science in specialty 14.01.20 - Anesthesiology and Intensive Care.



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I give my consent for collection, processing, storage and Internet allocation of my personal data required for activity of the dissertation board Д01.012.04



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