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STATEMENT

by Assoc. Prof. Darina Kirilova Georgieva-Hristova, MD, PhD

Associate Professor at the Department of Clinical medical sciences, Faculty of Dental Medicine
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Member of the Scientific Jury, appointed by Order No. № 109-300/21.08.2026r. of the
Rector of the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna

Regarding the Dissertation Thesis
of **Dr Nikolay Aleksandrov Bekyarov**

on the topic: „Evaluation and role of certain markers of endothelial dysfunction and oxidative stress in outpatients with metabolic syndrome“

for the award of the educational and scientific degree "**Doctor**," professional field 7.1 Medicine,
in the doctoral program "**General Medicine**," enrolled via Order No. R-109-646/21.12.2023

Scientific supervisor: Assoc. Prof. Valentina Hristova Madzhova, MD, PhD

Based on order № 109-300/21.08.2026r of the Rector of the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna, I have been selected as an internal member of the scientific jury, and pursuant to the minutes № 1/28.08.2026r, I have been assigned to prepare an opinion evaluating the dissertation work of Dr Nikolay Aleksandrov Bekyarov

The presented set of materials on the procedure for awarding the procedural requirements for obtaining the academic degree Doctor is complete, available in electronic and paper format and is in accordance with the requirements of the Low on the Development of Academic Staff in the Republic of Bulgaria and the Regulations on the Development of Academic Staff of the Medical University - Varna.

Brief biographical data

Dr Nikolay Aleksandrov Bekyarov obtained a Master's degree in Medicine from the Medical University of Varna in 2004. In 2015, he qualified as a specialist in Neurology at the Medical University of Varna. He also holds a qualification in Health Management from the Medical University of Varna.

Dr. Bekyarov began his professional career in 2006 as a staff physician in the Neurology Department of the Tervel Multiprofile Hospital for Active Treatment in Tervel. From 2007 to 2013, he worked as a physician in the Emergency Department of the Dobrich Multiprofile Hospital for Active Treatment in Dobrich.

Since 2007, he has been working as a neurologist at the Dobrich Multiprofile Hospital for Active Treatment (MBAL Dobrich), and since 2015, he has also been practicing as an outpatient neurologist at Viva Phoenix Medical Center in Dobrich.

He holds professional qualification certificates in the specialized fields of ultrasound Doppler sonography, Electromyography and Electroencephalography.

He is a member of the Bulgarian Medical Union and the Bulgarian Neurological Society. He is fluent in English and Russian, using them in his professional activities.

Relevance and significance of the topic

Ischemic strokes are a leading cause of mortality and long-term disability worldwide. Bulgaria is placed second in the world rankings in stroke morbidity and mortality.

Metabolic syndrome is a global issue, with cardiovascular and cerebrovascular diseases representing its most significant complications.

Endothelial dysfunction is considered a triggering pathogenetic mechanism in the development and progression of vascular diseases.

When determining the risk profile, it would be useful to examine the complex mechanisms of endothelial injury and protection, as well as the role of certain markers of endothelial dysfunction and oxidative stress in individuals with metabolic syndrome.

This is precisely what motivated the present study.

Structure of the dissertation

The dissertation contains 104 standard pages and is illustrated with 4 tables and 33 figures. The content is presented correctly and in detail. The most frequently used abbreviations are listed. The bibliography contains 281 titles in Latin.

Literature review

The literature reviews demonstrate knowledge of the sources and the extraction of in-depth information from them. It is purposefully constructed, emphasizing relevant aspects of the main topic.

The author highlights the role of endothelial dysfunction and oxidative stress in the development of atherosclerosis and vascular diseases in individuals with metabolic syndrome. In

this context, the role of certain markers of endothelial activation and oxidative stress in outpatients with metabolic syndrome is examined. The aspects covered in the literature review provide an adequate rationale for the study's aim and objectives and substantiate the motivation for developing the dissertation topic.

Goal and objectives

The goal is precisely formulated, namely: „To investigate and evaluate the role of certain markers of endothelial activation and oxidative stress in outpatients with metabolic syndrome. “To achieve the goal formulated in this way, eight clearly defined tasks have been set.

Materials and Methods

The study involved 83 individuals (63 women and 20 men) aged 30 to 64, divided into two groups: Group 1 consisted of outpatients with newly diagnosed metabolic syndrome, and Group 2 consisted of clinically healthy individuals.

Participants were selected based on specific inclusion and exclusion criteria.

The examinations were conducted at the Clinical Laboratory and Doppler Sonography Unit of the "St. Marina" Diagnostic-Consultative Center (Varna) and the Department of Biochemistry, Molecular Medicine, and Nutrigenomics at the Medical University of Varna.

The methods employed included a questionnaire survey, biochemical and clinical-laboratory analyses, genetic testing, functional assessments, and statistical analysis.

Results

The study results are illustrated in figures and tables. Comparative subgroup analyses were performed on the parameters under investigation—asymmetric dimethylarginine levels, lipid profile, atherogenic indices, glucose levels, BMI, waist circumference, uric acid, and malondialdehyde—comparing individuals with metabolic syndrome to a control group.

Of particular interest are the observations regarding the levels of asymmetric dimethylarginine and malondialdehyde, which were significantly elevated in individuals with metabolic syndrome.

Discussion

This section demonstrates Dr. Bekyarov's familiarity with the relevant literature. The discussion of the results presents an analysis comparing his findings with data from the literature. Based on the results obtained, it is suggested that asymmetric dimethylarginine and malondialdehyde may serve as predictive biomarkers for endothelial dysfunction and cardiometabolic risk.

Based on the obtained results, it is suggested that measuring asymmetric dimethylarginine levels, together with markers of oxidative stress (malondialdehyde, heme oxygenase-1, and nuclear erythroid factor), could form the basis for developing an effective model to monitor intima-media thickness and early vascular damage in individuals with metabolic syndrome.

Conclusions

The conclusions are formulated in eight points, reflecting the results obtained by Dr. Bekyarov. The conclusions presented are consistent with the obtained results.

As a neurologist, I consider the conclusion demonstrating the correlation between elevated intima-media complex values and age-related changes in antioxidant defense in individuals with metabolic syndrome to be of great significance.

Contributions

The cited contributions comprise six of an original nature and three of a scientific-applied nature.

Sources used

The bibliographic reference list includes 281 entries in the Latin script.

Publications and scientific events related to the dissertation

A list of publications and participation in scientific forums is presented. The research study has been approved by the Research Ethics Committee of the Medical University of Varna.

The dissertation abstract is available in both electronic and hard-copy formats; it comprises 48 pages and includes 5 tables and 27 figures. The abstract is structured in accordance with the requirements, and its content corresponds to the dissertation.

Conclusion

In terms of structure, scope, and content, the submitted dissertation meets all the requirements of the Act on the Development of the Academic Staff in the Republic of Bulgaria (ADASRB), the Regulations for the Application of the ADASRB, and the relevant regulations of the Medical University of Varna.

In view of the foregoing, I give a positive assessment of the dissertation by Dr. Nikolay Alexandrov Bekyarov for the acquisition of the educational and scientific degree of "Doctor."

25.09.2026

Varna

Prepared by: ..

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