REVIEW

by Prof. Dr. Valentina Christova Madjova, MD, DSc
Department of General Medicine
Medical University of Varna

of a dissertation entitled
"Predictive factors and prognosis of patients with acute kidney injury in COVID-19"

authored by Dr. Rumina Plamenova Shaleva

full-time PhD student at the Second Department of Internal Medicine,

Teaching Unit "Nephrology, Hemodialysis and Toxicology",

Medical University of Varna

for the award of the educational and scientific degree "Doctor" (PhD)
in the scientific specialty Nephrology

1. General presentation of the procedure

By Order of the Rector of the Medical University of Varna No. R-109-515/16.12.2025, I was appointed a member of the Scientific Jury and, according to the decision taken at its first meeting, designated as Chairperson and reviewer of the scientific work of Dr. Rumina Plamenova Shaleva.

The complete set of materials submitted in hard copy and electronic format was received within the stipulated deadline and fully complies with the requirements of the Procedure for acquisition of the educational and scientific degree "Doctor", in accordance with the Regulations of the Medical University of Varna. Upon detailed examination of the documentation, no violations of the doctoral degree awarding procedure were identified.

2. Brief biographical data of the doctoral candidate

Rumina Plamenova Koleva (Shaleva) was born on 16 September 1993 in the city of Varna. She completed her secondary education at Dr. Petar Beron Mathematical High School in Varna in 2012. In 2019, she graduated with a Master's degree in Medicine from the Medical University of Varna "Prof. Dr. Paraskev Stoyanov".

From 2020 to the present, she has been working as an Assistant at the Second Department of Internal Medicine, Teaching Unit "Nephrology, Hemodialysis and Toxicology", Medical University of Varna, and as a resident physician in Nephrology at the Clinic of Nephrology and Dialysis, St. Marina University Hospital, Varna.

3. Relevance and general characteristics of the dissertation

The dissertation submitted in electronic format addresses a significant public health issue and represents an attempt to summarize and analyze predictive factors and prognosis in patients with acute kidney injury in the context of COVID-19. The topic is of strategic importance, as the rapid pandemic spread of the infection necessitated dynamic changes in World Health Organization recommendations and continuous updates from international teams and independent experts.

The research aligns with the global scientific and health policy agenda related to prevention, health literacy, misinformation, and trust in medical professionals. The topic of the dissertation is considered highly relevant.

The dissertation comprises 210 pages and is illustrated with 10 tables and 73 figures. The literature review includes 327 references, all presented in Latin script.

4. Knowledge of the problem

I can confidently state that Dr. Rumina Shaleva is well acquainted with the problem of kidney injury in COVID-19, not only through the available scientific literature but also through her practical experience as a physician working at the Clinic of Nephrology of St. Marina University Hospital – Varna during the pandemic period.

5. Methodology of the study

The dissertation represents a retrospective, observational, single-center clinical study conducted over a four-year period (January 2020 – December 2023), including patients with laboratory-confirmed COVID-19.

Out of a total of 3,980 hospitalized COVID-19 patients during the study period, a random selection was performed, resulting in the inclusion of 436 patients in the final analysis.

The applied methodology is scientifically sound, well justified, and fully consistent with the objectives of the study. Data were obtained from the electronic hospital information system and individual medical records.

6. Characteristics and evaluation of the dissertation

The literature review is sufficient and provides an appropriate introduction, presenting COVID-19 as a pandemic-related public health problem.

The aim of the study is clearly defined: to determine the incidence and independent predictors of acute kidney injury in hospitalized patients with laboratory-confirmed COVID-19 and to assess the impact of acute kidney injury on key clinical outcomes during hospitalization. The aim is relevant, measurable, and adequately aligned with the scientific and societal context.

Seven research objectives are formulated. They are logically structured and reflect a strategic research approach demonstrating analytical thinking and methodological consistency.

The results are logically structured, clearly visualized, and correctly interpreted. Multivariate analysis identifies age, arterial hypertension, diabetes mellitus, and urea levels as independent predictors for the development of acute kidney injury.

The discussion is analytical, balanced, and appropriately correlated with existing scientific literature. The doctoral candidate establishes that acute kidney injury is a common complication in patients with COVID-19, with a pronounced association with age and the presence of comorbidities.

Patients with arterial hypertension and diabetes mellitus demonstrate a higher risk of developing acute kidney injury, which is consistent with published international data. Analysis of laboratory parameters at hospital admission reveals a characteristic unfavorable profile in patients with acute kidney injury, with serum urea emerging as the strongest prognostic factor.

The presence of acute kidney injury is associated with increased mortality and a more severe clinical course of the disease, confirming its role as an independent prognostic factor.

7. Contributions and significance of the dissertation for science and practice

Six conclusions are presented, fully consistent with the stated research objectives.

A significant contribution of the dissertation is the development of a clinical point-based scoring system for early risk stratification of acute kidney injury. The score demonstrates good prognostic value and can be applied in clinical practice to optimize patient triage and facilitate early nephroprotective management.

The doctoral candidate has identified four contributions of a theoretical nature and four of a practical-applied nature, reflecting the topical relevance of the research. All stated contributions are accepted as significant, well substantiated, and realistically formulated.

The dissertation has substantial practical value.

The abstract has been prepared in accordance with the institutional requirements and accurately reflects the main results achieved in the dissertation.

8. Evaluation of publications and personal contribution of the doctoral candidate

Dr. Rumina Shaleva has presented three scientific publications related to the dissertation topic, being the first author in two of them. The dissertation demonstrates that the author possesses in-depth theoretical knowledge and professional competencies in the scientific specialty of nephrology and exhibits the ability to independently conduct scientific research.

9. Critical remarks and recommendations

No critical remarks or specific recommendations regarding the dissertation are made.

10. Conclusion

The dissertation of Dr. Rumina Plamenova Shaleva represents a scientific study with a clearly defined aim, methodological rigor, analytical depth, practical orientation, and a significant contribution to the development of nephrology in Bulgaria. It contains original theoretical and applied results that meet the requirements of the Academic Staff Development Act of the Republic of Bulgaria, its Implementing Regulations, and the Regulations of the Medical University of Varna.

The author demonstrates excellent scientific competence, independence, critical thinking, and an understanding of the physician's role in the management of severe and pandemic-related diseases in support of public health.

All requirements stipulated in the Academic Development Regulations of the Medical University of Varna have been fulfilled. Based on the above, I confidently give a positive evaluation of the dissertation and propose that the esteemed Scientific Jury vote in favor of awarding the educational and scientific degree "Doctor" to Rumina Plamenova Shaleva in the doctoral program Nephrology.

12.01.2026

Varna

Prepared by:

Prof. Dr. Valentina Christova Madjova, MD, DSc

Department of General Medicine, Medical University of Varna

Заличено на основание чл. 5, §1, б. „В" от Регламент (ЕС) 2016/679