

To
The Chairman of the Scientific Jury
appointed by order № P-109-302/14.07.2025
of the Rector of the Medical University – Varna

STATEMENT

by Assoc. Prof. Dr. Martin Petrov Karamanliev, MD
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Subject: Procedure for acquiring the academic degree "PhD" in the field of higher education 7. "Healthcare and Sports", professional field 7.1. "Medicine", at the Medical University – Varna

General Comments on the Procedure

By order № P-109-302/14.07.2025 of the Rector of MU – Varna, I have been appointed as a member of the scientific jury for the procedure of acquiring the academic degree "PhD".

At the first remote meeting, I was assigned to prepare an statement.

The documents submitted by Dr. Stefan Blagovestov Mihaylov comply with the requirements of the national regulatory framework.

The literature review is presented in 90 standard typed pages, is sufficiently comprehensive, and covers important aspects of the issue. The available data related to transabdominal laparoscopic treatment of adrenal tumors in adults and children are presented and analyzed. The goal follows the title and is clearly formulated, from which six tasks arise:

1. To analyze the clinical characteristics of the patients.
2. To analyze the anatomical features.
3. To investigate early postoperative outcomes.
4. To investigate late postoperative outcomes.
5. To study the impact of endocrine diseases on intraoperative results.
6. To study the impact of endocrine diseases on postoperative complications.

For the period 2008 – 2024, 82 patients were identified.

The applied materials and methods are structured in 17 pages, with the methods grouped into six categories:

1. Documentary method
2. Clinical methods
3. Imaging methods
4. Laboratory methods
5. Therapeutic methods
6. Statistical methods

The results are described in 47 pages, covering 82 patients undergoing transabdominal laparoscopic treatment of adrenal tumors in adults and children, meeting the inclusion criteria for the study. The distribution is described by gender, age, pathology, localization, BMI, comorbidities, ASA category, need for antihypertensive therapy, tumor size, hormonal secretion, intraoperative time, intraoperative hemodynamics, blood loss, vascular anomalies, conversions, complications, postoperative indicators, time to verticalization, need for postoperative analgesia, and hospital stay.

Comparative analyses were performed concerning tumor localization and complication rates, complication rates and BMI, BMI and duration of the surgical procedure, hormonal activity of the tumor and complications, age and hospital stay, analysis of more than two variables, logistic regression analysis of the causes of complications, and analysis of postoperative hormonal profiles.

The discussion follows the issues set out in the dissertation. It is contained in 13 pages and shows knowledge of the problem, contemporary aspects, solutions to urgent issues, and future directions for development.

The conclusions follow the set goals and tasks and are based on the obtained results:

1. The group of patients examined shows heterogeneity in terms of clinical presentation associated with excessive hormonal synthesis. Additionally, patients present with significant comorbidity, with the majority having arterial hypertension even before the surgical treatment. This condition requires clarification of the underlying etiology, which necessitates an active diagnostic approach and careful preoperative assessment.
2. Anatomical variations in the blood supply and localization of the adrenal glands significantly impact the execution of the surgical technique. Arterial and venous anomalies are more commonly observed in right-sided lesions, which require more precise assessment during dissection. The transabdominal approach provides good visualization, allowing for the identification and control of anatomical structures regardless of individual variations.
3. Early postoperative results demonstrate rapid recovery with a low complication rate. The average period to verticalization and the need for analgesia are short, and intraoperative blood loss remains within acceptable limits. This confirms the benefits of the laparoscopic technique regarding minimal invasiveness and rapid recovery.
4. Late results show stable clinical improvement and a low recurrence rate in patients with benign formations. Endocrinologically active tumors show sustained hormonal remission. No significant late complications were found related to the laparoscopic approach or the functional residual capacity of the contralateral gland.
5. The presence of hormonally active tumors, particularly pheochromocytomas and cortisol-producing neoplasms, correlates with higher intraoperative hemodynamic instability. Despite mandatory preoperative medication preparation, hemodynamic control during surgery plays another key role, significantly reducing the risk of intraoperative complications.
6. Patients with endocrinologically active tumors have an increased risk of postoperative hormonal imbalances, including hypoadrenalism and hypertensive crises. However, with appropriate endocrinological monitoring and timely administration of replacement therapy, the frequency and severity of postoperative complications remain low and manageable.

Based on the analyzed results and summaries, the contributions of the dissertation are presented.

The following publications related to the dissertation have been published, all of which are linked to the scientific topic. In two of them, the candidate is the first author:

1. Mihaylov S. Minimally invasive treatment methods for adrenal tumors. *Scripta Scientifica Medica*. 2024; Online First. ISSN 0582-3250 (Print), ISSN 1314-6408 (Online).

2. Mihaylov S. Fever of unknown origin in a patient with myasthenia gravis following laparoscopic adrenalectomy—a case report. *Scripta Scientifica Medica*. 2025; Online First. ISSN 0582-3250 (Print), ISSN 1314-6408 (Online).
3. Zlatarov A, Drenakova P, Mihaylov S, Zgurova N, Petkova L, Ivanov KD. Malignant psammomatous melanotic schwannoma mimicking adrenal cyst: case report. *Ann Pediatr Surg*. 2022;18(1):51. doi: 10.1186/s43159-022-00189-w. Epub 2022 Jul 7. PMID: 35818469; PMCID: PMC9261228.
4. Aleksandar Zlatarov, S. Mihaylov, P. Stamov, Minimally Invasive Treatment Methods for Adrenal Tumors. Poster Session, Poster Session 11th Conference of ESES in Izmir 22-24.05.2025, Izmir, Turkey

Conclusion:

The presented dissertation is complete, well-structured, and excellently executed. It demonstrates knowledge of the problem and ways to solve it. The pathology is treated with an up-to-date and reliable method. The PhD student is aware of the methods for creating scientific research, executing it, and publishing the results. The statistical analysis is of high quality and practically useful. The dissertation fully complies with all legal provisions. Based on the above, I support the awarding of the educational and scientific degree "PhD" to Dr. Stefan Blagovestov Mihaylov.

04.08.2025
Pleven

Заличено на основание чл. 5,
§1, б. „Б“ от Регламент (ЕС)
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Respectfully:

Assoc. Prof. Martin Karamanliev, MD