

STATEMENT

by

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Member of the Scientific Jury based on order No. 109-383/19.09.2025 of the Rector of the Medical University of Varna, Bulgaria

Subject: defense of Assoc. Prof. Dr. Yanko Georgiev Yankov, MD for the acquisition of the scientific degree "Doctor of Science" in the scientific specialty "Surgery", field of higher education "7. Health and Sports", professional direction "7.1. Medicine".

1. Brief information about the career development of the dissertation candidate

Assoc. Prof. Yanko Georgiev Yankov, MD, PhD was born in Shumen in 1989. He graduated with a Master's degree in Medicine in 2014 and a Master's degree in Health Management in 2016 at the Medical University "Prof. Dr. Paraskev Stoyanov", Varna, Bulgaria. Since 2015, he has been working at the Clinic of Maxillofacial Surgery at the University Hospital "St. Marina", Varna, Bulgaria - initially as a resident physician, and since 2020, after acquiring a specialty in maxillofacial surgery - as a specialist. From 2019 to 2024, he worked as an assistant (part-time, full-time and head) in the Department of Oral Surgery at the Faculty of Dental Medicine and the Department of General and Operative Surgery at the Faculty of Medicine at the Medical University "Prof. Dr. Paraskev Stoyanov", Varna, Bulgaria. In 2021 and 2022, he was an independent doctoral student at the Department of General and Operative Surgery, Faculty of Medicine, specialty "Surgery" at the Medical University "Prof. Dr. Paraskev Stoyanov", Varna, Bulgaria and in 2022 he successfully defended his dissertation on the topic "Procalcitonin and delta neutrophil index levels in the surgery of head and neck inflammatory diseases" and acquired the educational and scientific degree "Doctor of Philosophy" (PhD). In 2024, he won a competition for associate professor of maxillofacial surgery and has been working as such since then in the Department of General and Operative Surgery of the Medical University "Prof. Dr. Paraskev Stoyanov", Varna, Bulgaria. In 2025, he was appointed head of the Clinic of Maxillofacial Surgery at the University Hospital "St. Marina", Varna, Bulgaria.

2. Relevance of the topic and knowledge of the problem

The **dissertation** is on the topic of "Lymph nodes in maxillofacial surgery – normal and most common diseases". Its volume is 222 pages. It is illustrated with 93 tables, 41 figures and 9 images. In the bibliography, the author used 428 literary sources, all of which are in English. The **abstract** for the dissertation is 76 pages long, including 18 tables and 12 figures.

The objectives of the dissertation are connected with the topic and are as follows:

- performing a modern and detailed cytological, histological, anatomical-topographical and anatomical-oncological description of the regional lymph nodes in the head and neck region, with an emphasis on their importance in maxillofacial surgery;

- analysis of lymph node diseases in the maxillofacial region in patients hospitalized in the Clinic of Maxillofacial Surgery, with distribution by gender, age and clinical diagnosis;
- classification of lymph node diseases into main diagnostic groups and study of their frequency and characteristics in clinical practice;
- study of the etiological bacterial spectrum in patients with abscesses and phlegmons originating from lymph nodes of the head and neck;
- study of antibiotic resistance in patients with infectious diseases of the lymph nodes, with analysis of the relationship between gender, age and type of isolated microorganism.

Everything written in the dissertation, as well as the detailed and in-depth analysis therein, give me reason to conclude that the author, Assoc. Prof. Yanko Georgiev Yankov, MD, PhD is well aware of the problem he describes.

3. Characteristics and evaluation of the conclusions and contributions reached by Assoc. Prof. Yanko Georgiev Yankov, MD, PhD

To achieve the goals set in the dissertation, the dissertation candidate creates and performs fourteen tasks which are a logic continuation of the aims of the dissertation.

After a detailed retrospective analysis of all patients with diseases of the lymph nodes in the maxillofacial region who were hospitalized in the Clinic of Maxillofacial Surgery at the University Hospital "St. Marina", Varna, Bulgaria for the period from 01.01.2015 to 31.12.2024 (n=563), he included them in nine separate nosological groups, which he described and analyzed in detail: actinomycosis, sarcoidosis, tuberculosis, felonitis, metastatic involvement of lymph nodes, lymphoproliferative diseases, chronic reactive lymphadenitis, abscessed lymph nodes and abscesses and phlegmons originating from them, as well as acute lymphadenitis. In his dissertation, he analyzed and compared the demographic characteristics of the studied patients and the dynamics of cases over the years of observation, the studied patients with head and neck lymph node diseases compared to their number, the studied patients with surgical and conservative treatment and between the studied patients with lymphoproliferative diseases in the maxillofacial region, the etiological spectrum of acute suppurative inflammations of the maxillofacial region lymph nodes and antibiotic resistance in acute suppurative inflammations of the maxillofacial region lymph nodes.

The correct and professional use of statistical methods to prove the scientific hypothesis is impressive. The statistical methods used to compare the indicators are accurate and reliable.

Thus, he reached thirteen significant conclusions:

- the number of hospitalized patients with head and neck lymph node diseases varies cyclically between 2015 and 2024 – with an increase until 2019, a decline during the Covid-19 pandemic (2020-2021), and recovery thereafter;
- there is no long-term and clearly expressed trend in the number of hospitalized patients with head and neck lymph node diseases, but rather short-term fluctuations reflecting external factors (such as the Covid-19 pandemic) and individual variability;

- hospitalized patients with head and neck lymph node diseases treated surgically are almost four times more than those treated conservatively;
- the most common diseases of the head and neck lymph nodes among the entire studied population of hospitalized patients are oncological, and the rarest are leishmaniasis and tuberculosis;
- in hospitalized men with cervical lymph node diseases, malignant diseases dominate - lymphomas and metastases, and in hospitalized women - lymphoproliferative and acute nonspecific lymphadenitis;
- in hospitalized men there are higher average values, but fewer different diseases of the lymph nodes of the head and neck, while women show a greater variety of diagnoses, but with a more even distribution among them;
- isolated Gram-positive microorganisms in hospitalized patients with acute lymphadenitis of the head and neck and with abscesses and phlegmons arising from them are more than ten times more than Gram-negative;
- age alone is not a significant predictor of antibiotic resistance in most cases of acute purulent inflammations of the lymph nodes of the head and neck in hospitalized patients. Differences in sensitivity are mainly due to the type of isolated microorganism, and not to the age of the patients;
- in even small representative samples (nine cases for levofloxacin and seven for meropenem), all isolates studied in purulent lymphadenitis of the head and neck showed 100% sensitivity to levofloxacin and meropenem - antibiotics with universal sensitivity;
- intestinal bacteria isolated in acute purulent infections of the lymph nodes of the head and neck in hospitalized patients remain highly sensitive to a wide range of antibiotics, while in patients with isolated staphylococci, the latter often exhibit partial or high resistance and require a more precise choice of therapy;
- there is no antibiotic to which both staphylococci and intestinal bacteria are absolutely resistant;
- a statistically significant gender dependence was found for piperacillin - the proportion of sensitive isolates was more than three times higher in men than in women with acute purulent lymphadenitis;
- males in acute purulent lymphadenitis have higher sensitivity to most antibiotics, while females show higher levels of resistance.

I accept the conclusions as formulated. They have significant scientific and practical value, providing guidelines for behavior derived from a large cohort of patients over a long period of time.

The contributions of the dissertation work of Assoc. Prof. Yanko Georgiev Yankov, MD, PhD are nine:

- a complete cytological, histological and anatomical-topographic analysis of the regional lymph nodes in the head and neck area was performed, with an emphasis on their importance in maxillofacial surgery;

- a detailed analysis of the age and gender demographic distribution of patients with lymph node diseases in the maxillofacial area was performed;
- for the first time in Bulgaria, a large and detailed comparison was made between surgical and conservative treatment in patients with lymphadenopathy in the maxillofacial area, which reflects the significant predominance of surgical interventions;
- the etiological bacterial spectrum of acute purulent lymphadenitis of the head and neck and the abscesses and phlegmons arising from them was described;
- an assessment of the antibiotic resistance of the isolated strains in purulent lymphadenitis of the head and neck was made, which allows for a more precise choice of antibiotic treatment;
- recommendations for clinical practice in the treatment of patients with metastatic involvement of the lymph nodes in the neck were prepared;
- high antibiotic sensitivity of intestinal bacteria and contrasting partial to high resistance of staphylococci to a number of antibacterial agents in purulent infections of the lymph nodes in the maxillofacial region were proven, which may assist in the choice of their empirical antibacterial treatment;
- gender-specific antibiotic sensitivity was proven in acute purulent lymphadenitis of the head and neck, against which the antibiotic piperacillin is three times more effective in men than in women;
- recommendations have been formed for optimizing antibiotic therapy for acute purulent lymphadenitis in the maxillofacial region, based on established patterns in gender-specific resistance - men have higher sensitivity to most antibiotics, while women require more precise selection.

I accept the contributions as formulated.

4. Conclusion

The dissertation is well organized and structured, it deals the problem in its entirety, and provides practical guidelines for improving clinical behavior. It meets the requirements of the Academic Staff Development Act of the Republic of Bulgaria, the Regulations for the Implementation of the Academic Staff Development Act of the Republic of Bulgaria and the Regulations for the Development of the Academic Staff of the Medical University "Prof. Dr. Paraskev Stoyanov", Varna, Bulgaria for the award of the scientific degree "Doctor of Sciences" in the scientific specialty "Surgery".

Based on everything written above, I give a **positive assessment** to **Assoc. Prof. Yanko Georgiev Yankov, MD, PhD** for awarding the **scientific degree "Doctor of Science"** in the **scientific specialty "Surgery"**, field of higher education "7. Health and Sports", professional direction "7.1. Medicine".

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13.10.2025

Assoc. Prof. Martin Petrov Karamanliev, DMD, PhD

Pleven, Bulgaria

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