

STATEMENT

by Assoc. Prof. Vasil Gospodinov Sveshtarov, DMD, PhD

Department of Dental, Oral and Maxillofacial Surgery, Faculty of Dental Medicine, Medical University of Sofia, Bulgaria – member of the Scientific Jury, appointed by Order No. P-109-436/17.10.2025 of the Rector of the Medical University "Prof. Dr. Paraskev Stoyanov", Varna, Bulgaria

Regarding: preparation of a statement on the dissertation thesis titled "Microbiological profile of purulent-septic diseases in oral and maxillofacial surgery" authored by Iliana Dimitrova Mechkarova, MD, PhD for the award of the educational and scientific degree "Doctor of Philosophy" in the scientific specialty "Surgery" in the field of higher education "7. Healthcare and Sports", professional field "7.1. Medicine"

I. Biographical information on the doctoral student

Iliana Dimitrova Mechkarova, MD, PhD completed her master's degree in dental medicine at the Medical University of Plovdiv, Bulgaria, after which she obtained a master's degree in medicine from the Medical University "Prof. Dr. Paraskev Stoyanov", Varna, Bulgaria. Her professional development is linked to the Clinic of Maxillofacial Surgery at University Hospital "Sveta Marina", Varna, Bulgaria, where she specialized and acquired a specialty in oral surgery. She has experience as a research associate in Germany, where she gained significant expertise in cell cultures and *in vitro* experiments. Since 2022, she has been enrolled as a full-time doctoral student at the Department of General and Operative Surgery at the Faculty of Medicine, Medical University "Prof. Dr. Paraskev Stoyanov", Varna, Bulgaria. Iliana Mechkarova has actively participated in numerous scientific forums and has publications in peer-reviewed journals, which is indicative of her sustained interest in research work, high scientific culture, and professional growth.

II. General assessment of the dissertation thesis

After thoroughly reviewing the submitted dissertation thesis, its abstract, and the two attached scientific publications related to the topic of the dissertation, I express my opinion that Iliana Mechkarova's dissertation thesis represents an exceptionally timely and necessary scientific study for clinical practice. The problem of purulent infections in the oral and maxillofacial region is fundamental to our specialty, but its effective solution is becoming increasingly complex due to dynamic changes in microbial etiology and the global crisis of antibiotic resistance.

The doctoral student has approached the topic with the necessary depth and scientific precision. The retrospective analysis conducted is impressive in its scale – covering a 10-year

period and over 1700 clinical samples, which in itself is a significant achievement and allows for the formulation of statistically reliable and clinically significant conclusions.

III. Assessment of content and methodology

The dissertation thesis is excellently structured, written in clear and precise scientific language. The methodology is adequate to the set goal and allows for the acquisition of reliable data. I consider the following aspects of the research to be particularly valuable for science and practice, as they represent fundamental scientific contributions:

1. the creation of an up-to-date "microbiological map" for the region, which serves as an invaluable practical guide for clinicians in selecting initial, empirical therapy. It provides the physician with a scientifically sound tool for informed decision-making in conditions of uncertainty, minimizing the risk of therapeutic failure;
2. the analysis of temporal dynamics through the establishment of the so-called "staphylococcal shift" is an original and exceptionally important scientific contribution. This result is an alarm signal that the microbiological landscape is evolving and that therapeutic approaches, considered standard until recently, may no longer be optimal;
3. the study not only concludes with findings but also offers concrete, scientifically substantiated guidelines for improving both the therapeutic approach (rethinking the empirical choice of antibiotic) and the diagnostic process (the need for better practices for isolating anaerobic bacteria).

The conclusions are clearly written, synthesized, and directly follow from the obtained results, summarizing the key findings of the dissertation. Among them, the following important observations stand out:

1. regarding the diagnostic challenge and the role of resident microflora, a complex microbiological profile with a predominance of the latter is established, which underscores the necessity of local epidemiological data for adequate empirical antibiotic therapy;
2. concerning the leading etiological agents and the significance of coagulase-negative staphylococci, it is determined that these microorganisms are leading pathogens, not merely contaminants;
3. there is a clear etiological differentiation with respect to the origin of the infection, as results show a different microbiological profile in odontogenic infections (dominated by streptococci) and non-odontogenic inflammations (dominated by staphylococci), which is of substantial importance in the selection of initial antibacterial therapy;

4. anatomical correlations were found, indicating that over 70% of odontogenic infections originate from the mandible, consistent with the anatomical prerequisites for their spread;

5. the study identifies a "staphylococcal shift" trend, expressed as an alarming increase in isolated staphylococci and a decrease in streptococci over the last five years;

6. regarding methodological limitations and the role of anaerobes, the low proportion of isolated anaerobes is most likely due to a methodological artifact, necessitating obligatory anti-anaerobic coverage in empirical therapy, despite their low isolation rates;

7. the significant role of fungi as co-pathogens is emphasized, and it is established that *Candida spp.* represent a significant proportion of isolates, requiring heightened attention to the risk of fungal superinfections.

IV. Assessment of personal contribution and qualities of the doctoral student

In her dissertation thesis, Iliana Mechkarova, MD, DMD not only demonstrates excellent knowledge of the problem she addresses but also the ability to handle a large volume of data, analyze it critically, and synthesize the information into clear and logical conclusions and contributions. The work is well-written, structured, and illustrated, which speaks to a high scientific culture and a responsible attitude towards the research process. I believe that the doctoral student fully meets, and in many aspects exceeds, the requirements for the award of the educational and scientific degree "Doctor of Philosophy".

V. Conclusion

The dissertation thesis complies with the Law for the Development of Academic Staff in the Republic of Bulgaria and the Regulations of the Medical University "Prof. Dr. Paraskev Stoyanov", Varna, Bulgaria for acquiring the educational and scientific degree "Doctor of Philosophy". I acknowledge its undisputed contributions to clinical practice and give my positive assessment for the award of the educational and scientific degree "Doctor of Philosophy" to Iliana Dimitrova Mechkarova, MD, DMD in the scientific specialty "Surgery" in the field of higher education "7. Healthcare and Sports", professional field "7.1. Medicine".

10.11.2025

Sofia, Bulgaria

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