

To the Chairman of the Scientific Jury,
appointed by order P-109-440 of 05.12.2024
of the Rector of MU-Varna on the basis of a
decision of the Faculty Council Protocol
31/02.12.2024

OPINION

by Prof. Dr. Romyana Donkova Markovska-Davidkova, MD, PhD

**Department of Medical Microbiology "Member Prof. Dr. Ivan Mitov, PhD" Faculty of
Medicine, Medical University – Sofia**

Regarding: Competition for the academic position " Associate Professor" in the field of field of higher education 7.0 Health and Sports and professional field 7.4. Public Health, specialty "Public Health Management (Clinical Microbiology)" for the needs of the Department of "Microbiology and Virology", MU-Varna, announced in the State Gazette, issue 85 of 08.10. 2024, with a single candidate Head Dr. Denis Sunay Niyazi, db

The submitted documents for the procedure have been prepared correctly, complying with the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the regulations for its implementation at the MU-Varna. I declare that I have no conflict of interest with the candidate.

BIOGRAPHICAL DATA AND CAREER DEVELOPMENT

Dr. Niyazi graduated as a Master of Medicine in 2018. In 2019, he started working at the Department of Microbiology and Virology, MU-Varna as a full-time PhD student and assistant-professor. He has a recognized specialty in clinical microbiology since 2024. Since 2023, he has been a senior assistant at the Department. In 2022, he successfully defended his PhD thesis on the topic "Study on bacteremia and invasive mycotic infections in patients after autologous and allogeneic hematopoietic stem cell transplantation" and acquired the educational and scientific degree "Doctor".

TEACHING ACTIVITY

Dr. Niyazi's teaching activity for the period 2019-2024 is extensive and includes over 1,300 hours of exercises, with 594 hours for the last two years.

RESEARCH ACTIVITY

The scientific and research activity of Dr. Niyazi is impressive considering his short work experience. It can be divided in three main directions.

The first is a natural continuation of his PhD thesis. It focuses on infectious complications in patients with hematological malignant diseases and hematopoietic stem cell transplantation and the antimicrobial resistance of the causative agents of these infections. A 6-year period (2015 - 2020) was covered, including 298 patients with hematological malignant diseases and their 316 blood isolates. A dominance of Gram-negative bacteria (54.7%) was found as causative agents of bacteremia, with leading species *E. coli* (14.5%), *Enterobacter* spp. (12%) and *Klebsiella* spp. (10.1%). The species *Acinetobacter baumannii*, *Pseudomonas aeruginosa* and *Klebsiella pneumoniae* stand out as producers of carbapenemases. In addition, Dr. Niyazi studies blood infections in patients with hematopoietic stem cell transplantation - incidence, risk factors and outcome of the infection. Such a study is being conducted for the first time in Bulgaria. Dr. Niyazi and his team found that the risk factors for the occurrence of blood infection after hematopoietic stem cell transplantation are intestinal colonization with multidrug-resistant bacterial strains, as well as bacteremia occurring before transplantation. The incidence of death within 30 days after hematopoietic stem cell transplantation was found to be 23%. The four-month survival rate is high - 86.5%.

The second direction is related to mycotic infections. The first case of mucormycosis after COVID-19 infection is described. A rare case of primary multifocal cutaneous mucormycosis in a two-year-old child with newly diagnosed acute lymphoblastic leukemia is presented. The effectiveness of molecular genetic diagnostics (PCR), including in combination with imaging and histological techniques in the diagnosis of mucormycosis, has been proven. The activity of amphotericin B in childhood against the causative agents of mucormycosis has been confirmed. A case of a man with invasive pulmonary mycotic infection caused by *Aspergillus* sp. and *Pneumocystis jirovecii*, complicated by reactivation of *Cytomegalovirus* after a second allogeneic hematopoietic stem cell transplantation, is described. The topic of the

monograph also concerns mycotic infections. Dr. Niyazi examines invasive aspergillosis in patients after hematopoietic cell transplantation. The monograph fulfills all the requirements of the regulations, has 2 reviews, an ISBN number and is over 200 pages. It is a very thorough work, presenting the morphology and structure of the genus *Aspergillus* spp, its distribution, clinical forms of aspergillosis, risk factors for the development of invasive aspergillosis, pathogenesis and microbiological diagnostics (confirmation of aspergillosis and determination of the sensitivity of the causative agent). Of particular importance is the section on recommendations for the diagnosis, prevention and therapy of invasive aspergillosis. The monograph has 518 literary sources, and is additionally based on its own studies, which shows its significance.

The **third direction** is related to studies on COVID-19 infection. A questionnaire-based anonymous study was conducted among 230 students from various Bulgarian universities on the readiness for vaccination against COVID-19 and the factors influencing their choice. A study was conducted to determine the frequency of patients with COVID-19 hospitalized at the University Hospital "St. Marina" - Varna during the first year of the pandemic. It has been proven that nearly 40% of the tested samples are positive for SARS-CoV-2. The age group most affected by the virus (60-79 years) has been established. Male gender has been confirmed as a risk factor in the 20-59 age group, and in the < 19 age group, female gender is a prerequisite for the occurrence of infection. A study was conducted to determine the reliability of immunochromatographic tests for diagnosing infected patients. The results of over 2500 patients were compared and a sensitivity of 60.2% and specificity of 98.1% for the "rapid tests" was determined, which confirms their role in the diagnostic process, but does not replace PCR tests. In close connection with COVID-19 infection, a wide intrahospital spread of carbapenem-resistant *Klebsiella pneumoniae* and *Enterobacter cloacae* complex clones, carriers of mainly blaKPC, was studied and proven. The role of antibiotic overuse in COVID and intensive care units in the emergence of resistant strains was confirmed. Gram-negative bacteria

SCIENTIFIC INDICATORS

The results of Dr. Niyazi's research have been published in 20 articles (excluding those associated with the dissertation). Seventeen of them have been published in journals referenced by world databases. Nine of them have a total impact factor of 17.57. Evidence for 19 citations

has been presented. The analysis of the scientific indicators shows that Dr. Niyazi meets the requirements of the MU-Varna requirements, as well as the national requirements with a total of 789.71 points out of the required 400.

CONCLUSION

I have a very good impression of the professional development of Dr. Niyazi. His scientific work is distinguished by its thoroughness and precision. He is very successful in molecular genetic research and the presented works are impressive in volume, considering the short period in which he also took a specialty. The presented documents show that he is an established scientific worker and fully meets the requirements of the ZRASRB, the Regulations on the conditions and procedure for acquiring scientific degrees and occupying academic positions at the Medical University - Varna, as well as the national requirements necessary for awarding the academic position of "associate professor". Dr. Niyazi also meets the additional requirements of the competition.

I give a positive assessment and propose to the Scientific Jury to award the academic position of "associate professor" to Dr. Niyazi in 7.0 Health and Sports and professional field 7.4. Public Health, specialty "Public Health Management (Clinical Microbiology)" for the needs of the Department of "Microbiology and Virology", MU-Varna.

9.02.2025

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