To: The Chairman of the Scientific Jury
Order No. P-109-313/29.07.2022 of the Rector of MU-Varna
Faculty of Dental Medicine
MU "Prof. Dr. Paraskev Stoyanov" - Varna.

REVIEW

For a competition to occupy the academic position of **"Professor" in "Nuclear Medicine"** in the scientific specialty "Medical Radiology and X-ray Radiography (including using radioactive isotopes)", professional direction 7.1 "Medicine", in the field of higher education 7 "Health and sport", announced in the state gazette number 41/03.06.2022 for the needs of the Department of "Periodontology and Dental Implantology", Faculty of "Dental Medicine", Medical University "Prof. Dr. Paraskev Stoyanov-"Varna

by Prof. Dr. Elena Nikolova Piperkova, MD, Dr. Med. Sc.,

Head of the Nuclear Medicine Clinic at the University SHAL on Oncology, Sofia, elected by Order No. P-109-313/29.07.2022 of the Rector of MU-Varna as a member of the Scientific Jury in the competition and by Protocol No. 1 of the first meeting of SJ selected as a reviewer.

Associate Professor Borislav Georgiev Chaushev MD, Head of the Department of Periodontology and Dental Implantology, Faculty of Dental Medicine, Medical University "Prof. Dr. Paraskev Stoyanov" - Varna" **participates as a sole applicant in the mentioned competition**

Brief biographical data

Asoc. Prof. Dr. Borislav Georgiev Chaushev was born on 13.06.1974 in Varna. He completed his secondary education at the Humanitarian High School "Konstantin Preslavski" in his hometown. He graduated from the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna in 2001, and in 2007 acquired a specialty in "Nuclear Medicine" and in 2010 – educational and scientific degree "Doctor" in the scientific specialty of "Medical Radiology and X-ray radiography (incl. use of radioactive isotopes). His career path as a doctor, after graduation, began as a resident physician in the Clinic for Nuclear Medicine and Metabolic Therapy in "St. Marina" UMPHAT - Varna, where he still works, and since 2020 he has been the head of the Clinic. In his academic development, he went from chief assistant to his election as Associate Professor in 2015, where he continues to work until now.
Assoc. Prof. Dr. Borislav Chaushev teaches and passes on his experience to students of medicine, dentistry, X-ray laboratory technicians, post-graduates and doctoral students. Under his leadership, four doctors have acquired a specialty in Nuclear Medicine and four have obtained the educational and scientific degree "Doctor". In addition to extensive professional experience in the field of nuclear medicine diagnostics and metabolic therapy in our country, he completed a number of courses to improve his qualifications in leading clinics in the specialty abroad. He publishes his scientific results and clinical cases from his clinical practice in national and international scientific publications. He participates in a number of scientific forums in the country and abroad. He is fluent in English, which is evident from his publication-representative and teaching activities.

Scientometric indicators

In the current competition for the academic position of "Professor", Assoc. Prof. Dr. Chaushev participated with **112** scientific papers, of which **74** were peer-reviewed when he was awarded the academic position of "Associate Professor" and **35** were published after the award of the academic position of "Associate Professor". object of review in the current competition for the academic position "Professor".

The general publication activity of Assoc. Prof. Dr. Borislav Chaushev, provided in the competition for the academic position "Professor", includes:

Full-text articles - 16 pcs;

Participation in a collective monograph – 2 pcs;

Published summaries of reports from scientific forums in the country and abroad - 17 pcs;

Participation in scientific forums in the country and abroad, with a program – 23 pcs;

In the presented materials, Assoc. Prof. Chaushev is the first author in 3, second in 6 and third and subsequent author in 27 articles. 10 of them are in publications, referenced and indexed in world-famous databases with scientific information, with an impact factor of 146,547. His overall impact factor (IF 146, 547) proves the scientific significance of his publications.

Assoc. Prof. Chaushev has presented over 50 citations in national and foreign journals, which once again proves his publication activity, his scientific interests and contributions.

Evaluation of the contributions

The presented scientific works and the results of the research work of the applicant - Assoc. Dr. Borislav Georgiev Chaushev, MD, can be thematically divided into the following scientific areas:

I. Nuclear Gastroenterology;

II. Nuclear oncology;

III. Other.

I. Nuclear Gastroenterology:

1. **Main theoretical contribution**: Assoc. Prof. Dr. Chaushev made for the first time in Bulgaria a thorough analysis of the motor-evacuator function of the stomach in dysautonomous manifestations of Parkinson's disease, Multiple Sclerosis, as well as functional disorders in diabetes mellitus, by applying a non-invasive, highly sensitive, scintigraphic method under normal feeding conditions. The motor-evacuatory function of the stomach was studied in healthy volunteers and qualitative and quantitative criteria for normal gastric motility were created.

2. **Methodological contributions** include the proposed modified physiologically adequate breakfast, allowing the assessment of gastric motility in natural conditions, as well as the established protocol for achieving high informativeness of the applied functional nuclear medicine method - serial gastro scintigraphy.

3. To **applied clinical-diagnostic contributions,** I highlight the following:

a. The proposed diagnostic algorithm of inclusion of serial gastro scintigraphy in socially significant diseases such as Diabetes Mellitus, Parkinson's disease and Multiple Sclerosis.

b. Inclusion of serial gastro scintigraphy at each stage of the diagnosis of diabetes mellitus type 1 and type 2, to establish discrete disturbances in gastric motility, gastric complaints and digestive problems undetectable with other research methods, in patients with this severe metabolic disease.

c. For the first time, the need for early inclusion of serial gastro scintigraphy in dysautonomous manifestations of Parkinson's disease and Multiple Sclerosis has been indicated for the timely therapeutic impact of scintigraphically established gastric atony and better absorption of medications from the therapeutic scheme in these diseases.

d. Pointing out the importance and observance of whole-body in-depth analysis and precise description of the results of imaging nuclear medicine studies, in the detection and early diagnosis of clinically unmanifested diseases and incidental findings, side effects in the course of treatment of the main (known at the time of scanning) disease. This is evident in his publications and presented clinical cases.

II. Nuclear oncology:

1. To **scientific contributions,** I highlight the following:

a. The role of FDG PET/CT in detecting early asymptomatic recurrences in cervical carcinoma patients with high SCC tumor marker values and negative conventional imaging studies at follow-up has been studied and proven. The high specificity and sensitivity of the method makes it possible to establish distant metastases, staging and monitoring of patients with cervical carcinoma.

b. The predictive and prognostic performance of the maximum standardized uptake value (SUVmax) of 18F-fluorodeoxyglucose positron emission tomography in pretreatment in patients with colon cancer and unresectable liver metastases and the relation of this value with Beclin-1 expression was studied and evaluated.

High values of the maximum standardized value of 18F-fluorodeoxyglucose did not have a statistically significant correlation with progression-free survival, but significantly proved poor overall survival. There is an inverse negative correlation between Beclin-1 values and the maximal standardized uptake value of 18F fluorodeoxy-glucose.

c. RIPK3 expression was investigated as a potential predictive and prognostic marker in metastatic colon cancer. A high level of RIPK3 expression was found to be associated with longer overall survival in patients with metastatic colon cancer.

d. The diagnostic value of 68Ga-PSMA PET/CT in patients with biochemical recurrence after radical treatment of prostate carcinoma has been studied and proven. 68Ga-PSMA PET/CT is a method superior to conventional CT in the diagnosis of recurrent lesions and local recurrence of prostate carcinoma even at low a PSA levels.

e. The diagnostic value of 18F-FDG PET/CT was evaluated as an imaging modality in the detection of local recurrence of synchronous laryngeal tumor in the follow-up period for restaging primary colorectal carcinoma.

f. Biopsy with histological verification was found to be the method of choice in differentiating inflammation caused by talc pleurodesis or malignant infiltration in increased FDG PET/CT accumulation in areas of pleural effusion in patients with pleural effusions and pneumothorax.

g. The prognostic and diagnostic value of increased maximum standardized value (SUV max) of FDG accumulation in regional lymph nodes in patients with pre-treatment NSCLC, which is associated with poor overall survival, has been studied and demonstrated.

h. It has been evaluated and studied that the degree of FDG accumulation in PET positive lesions does not always represent malignancy, which requires mandatory confirmation of the diagnosis with fine needle biopsy.

i. The high diagnostic value of 18F-FDG PET/CT was assessed as an imaging method in the diagnosis of synchronous tumors and distant metastatic lesions.

2. To **the scientific-applied and methodological contributions**, I refer the following:

a. The high specificity and sensitivity of 18F-FDG PET/CT was evaluated in the diagnosis of bone lesions in multiple myeloma compared with conventional radiography.

b. The role of 18F-FDG PET/CT has been studied and proven as an imaging method in establishing progression in calcified metastatic serous papillary cystadenocarcinoma of the ovaries in negative conventional imaging studies.

c. The high sensitivity and negative predictive value of FDG PET/CT was evaluated as a non-invasive method in identifying local recurrence in patients with squamous cell carcinoma of the head and neck, even if there is diagnostic doubt after physical examination / endoscopy.

d. The superior role of 18F-FDG PET/CT has been proven as an effective imaging method compared to CT-CE for the assessment of extranodal involvement of diffuse large B-cell lymphoma (DLBCL).

e. False-positive results providing data on progression after performed 18F-FDG PET/CT in patients with metastatic melanoma and chondrosarcoma were evaluated and studied.

f. The role of 18F-FDG PET/CT was evaluated as an imaging modality in searching for primary tumor focus and determining biopsy site.

g. The role of 68Ga-PSMA has been studied and proven as an imaging method in the diagnosis of distant metastatic lesions in the initial staging of patients with high-risk prostate carcinoma.

h. The role of 18F-FDG PET/CT has been studied and proven in monitoring the complete clinical response from performed chemotherapy and radiotherapy in patients with malignant epithelial tumors of the head and neck.

i. A false-positive result providing evidence of progression from a performed 18F-FDG PET/CT in a patient with biliary tract carcinoma was evaluated and investigated.

j. The role of nuclear magnetic resonance imaging (MRI) in the initial staging and planning of radiotherapy in patients with locally advanced nasopharyngeal carcinoma was investigated. MRI enables precise visualization of tumor invasion and precisely defines the volume of treatment.

3. To **publications applied in clinical practice**, I refer:

a. The role of 18F-FDG PET/CT was evaluated as a restaging method reporting progression in a patient with a malignant peripheral nerve sheath tumor developed on the basis of neuromatosis.

b. The role of 18F-FDG PET/CT has been explored as a non-invasive imaging modality, offering a huge opportunity for successful identification with precise anatomical localization of previously undetected primary tumors in metastatic cervical lymph node data from squamous cell carcinoma alone.

c. Data from the literature affirming 18F-FDG PET/CT were confirmed as a method with an important role in nodal and distant staging of epithelial carcinomas of the head and neck and complementing the results of conventional imaging studies. (DOP-1)

d. The role of PET/CT has been evaluated and proven in the diagnosis and staging of early and advanced mammary carcinoma.

III. Other:

1. Functional abnormalities in patients with essential tremor using 18F-FDG PET/CT were studied and evaluated, and new data were provided on possible changes in Brockmann's area, visual areas, and anterior cingulate cortex.

2. The role and place of MRI in the diagnosis of pyogenic liver abscesses has been studied and confirmed. The lack of ionizing radiation, multiplanar imaging, high tissue contrast difference, give MRI an advantage over other imaging methods for diagnosing the root cause of PLA and accompanying pathology, which determine the therapeutic behavior in these patients.

3. Free thyroxine levels in washout after fine-needle aspiration biopsy of toxic thyroid nodules have been studied and found to be significantly higher than the surrounding parenchyma and correlated with hormonal changes.

4. The role of dynamic renal scintigraphy with 99mTc-DTPA was evaluated in the diagnosis of congenital hydronephrosis.

5. Dynamic renal scintigraphy allows to determine the degree of urodynamic dysfunction. It can be used not only for the primary diagnosis of hydronephrosis and other renal dysfunctions and abnormalities, but can be a subsequent leading method for functional evaluation after corrective surgery and complex treatment.

6. The key role of 18F-FDG PET/CT has been evaluated as an imaging modality in the diagnosis of complications of infective endocarditis.

Teaching activity

Associate Professor Dr. Chaushev conducts lectures and exercises for fourth-year Bulgarian and foreign students of medicine, dentistry and nursing at Varna Medical College (x-ray laboratory assistants). He participates in examination boards of the above-mentioned students.

He is a member of the Academic Council of MU "prof. Dr. Paraskev Stoyanov" – Varna.

Under his leadership, four doctoral students have obtained educational and scientific degree "Doctor". Four post-graduates have successfully passed their state exam in nuclear medicine. He participates in the state examination board for the specialty in Nuclear Medicine at the Ministry of Health. He actively participates with lectures in the Basic course for the training of post-graduate doctors in the clinical medical specialty "Nuclear Medicine".

Since 2018, Assoc. Prof. Dr. Chaushev is the Head of the Department of "Periodontology and Dental Implantology" at the Faculty of "Dental Medicine" of the MU "Prof. Dr. Paraskev Stoyanov"-Varna", which undoubtedly proves his organizational and administrative experience.

Assoc. Prof. Dr. Chaushev is the organizer and co-organizer of a number of educational and scientific forums in our country with international participation, as well as events organized by the Clinic of "Nuclear Medicine and Metabolic Therapy" UMPHAT "St. Marina-Varna" and Medical University "Prof. Dr. Paraskev Soyanov" – Varna.

He is a member of the Bulgarian Scientific Society of Nuclear Medicine (BSSNM), the European Association of Nuclear Medicine (EANM), etc.

Clinical work

Assoc. Prof. Dr. Chaushev actively participates in the daily clinical activities of the "Clinic of Nuclear Medicine with Metabolic Therapy" of "Sveta Marina" MPHAT, Varna. Since 2020, he has been the Head of the Clinic, which once again proves his organizational experience. He knows all techniques and methods of clinical metabolic-hybrid-diagnostic and metabolic therapeutic activities.

Assoc. Prof. Dr. Chaushev is an affirmed, highly qualified professional, collegial, ethical and sought after by his patients and colleagues. He actively participates as a leading specialist in nuclear medicine, together with colleagues from the Clinic, and carries out excellent collaboration with all the Clinics of the "St. Marina" MPHAT – Varna, as well as with the clinical structures of the specialty in other medical institutions in the country.

Conclusion: Assoc. Prof. Dr. Chaushev is a lecturer and leading specialist in nuclear medicine with great experience and practice. He is respected not only by his colleagues in the field of nuclear medicine and imaging, but also by doctors from other clinical specialties. He possesses organizational and administrative qualities, teamwork skills and is a conductor of innovations in the specialty and medicine in general.

The presented scientific works are proof of his creative and scientific-research spirit and have a methodical and scientific-practical character. Publications and reports presented at international scientific forums make an important contribution to the development of nuclear medicine in Bulgaria and its international validation.

Based on the above-mentioned scientific contributions, scientometric indicators, scientific, teaching, clinical and administrative experience of Assoc. Prof. Dr. Borislav Chaushev and his personal academic and collegial qualities from his collaboration and appearances in the Guild of Nuclear Medicine in the country, as well as his presentations in the international scientific community, I consider that he satisfies the requirements of the "Law and Regulations for the Development of the Academic Staff in the Republic of Bulgaria" and the regulations of the Medical University "Prof. Dr. Paraskev Soyanov" – Varna. I give my affirmative vote - "YES" and recommend to the respected members of the Scientific Jury to award **Assoc. Prof. Dr. Borislav Georgiev Chaushev, MD, the academic position of "Professor".**

Prof. Dr. Elena Piperkova, MD. Dr. Med. Sc.

Sofia
12.09.2022