

To the Chairman of the Scientific Jury,  
by Order No. R - 1558/ 28.06.2022.  
of the Rector of the Medical University - Varna  
order No P-109-313/29.07.2022

**Review**  
for the academic position of "PROFESSOR"  
in specialty "Imaging diagnostics"  
announced for the needs of MU-Plovdiv, Department of Imaging  
in SG, no. 41/03.06.2022

**Reviewer:**  
Prof. Dr. Boyan Dobrev Balev, MD  
Scientific specialty: Imaging diagnostics  
Institution: Department of Imaging, Interventional Radiology and Radiotherapy, Medical  
University "Prof. Dr. P. Stoyanov" Varna, Imaging Diagnostics Clinic of UMBAL "St.  
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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, is the only candidate.

### **Brief biographical data**

Assoc. Dr. Borislav Chaushev started as a resident physician at the Clinic for Nuclear  
Medicine and Metabolic Therapy UMBAL "Sveta Marina"-Varna, where he still works and  
since 2020 is the head of the Clinic. In 2007, he acquired a specialty in "nuclear  
medicine". In 2010, he obtained a doctorate from the National Academy of Sciences in  
the scientific specialty "Medical radiology and radiology (including the use of radioactive  
isotopes), he has been an associate professor since 2015.

### **Scientific indicators**

*Dissertation:* Nuclear medicine methods for establishing disorders in the motor-evacuator  
function of the stomach in various diseases, 2015.

*Participation in textbooks, monographs, collections, manuals (after associate professor) -*

*Participation in international scientific meetings (after associate professor) – 23*

*Publications (after Associate Professor):*

- In full-text magazines - 16
- Published abstracts – 17

Prof. Chaushev is the first author of the 3 scientific works.

Prof. Chaushev participated in the competition with 10 of the articles referenced and indexed in world-famous databases with scientific information

According to the reference for Assoc. Chaushev, more than 50 citations were found in our and foreign journals.

Total IF 146.547.

### **Evaluation of contributions**

The presented scientific works and the results of the research work of Assoc. Dr. Borislav Georgiev Chaushev, d.m. are thematically divided into the following scientific areas:

#### **I. NUCLEAR GASTROENTEROLOGY**

For the first time in Bulgaria, an in-depth 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 is performed by applying a non-invasive highly sensitive scintigraphic method in conditions of normal nutrition. The motor-evacuatory function of the stomach was studied in healthy volunteers and qualitative and quantitative criteria for normal gastric motility were created.

A modified physiologically adequate breakfast allowing the assessment of gastric motility in natural conditions and the established protocol for achieving high informativeness of the applied method-serial gastroscintigraphy.

A diagnostic algorithm for the inclusion of serial gastroscintigraphy in socially significant diseases such as diabetes mellitus, Parkinson's disease and multiple sclerosis is proposed.

Inclusion of serial gastroscintigraphy at each stage of diagnosis of diabetes mellitus type 1 and type 2, to establish discrete disturbances in gastric motility, undetectable by other research methods in this severe metabolic disease.

For the first time, the need for early inclusion of serial gastroscintigraphy in dysautonomous manifestations of Parkinson's disease and multiple sclerosis has been indicated for timely therapeutic impact on scintigraphically established gastric atony and better absorption of medications from the therapeutic regimen in these diseases.

## II. NUCLEAR ONCOLOGY

### 1. Scientific contributions

The role of FDG PET/CT in detecting early asymptomatic recurrences in patients with cervical carcinoma and distant metastases with high values of the tumor marker SCC and negative conventional imaging studies at follow-up has been studied and proven.

The predictive and prognostic performance of the maximum standardized uptake value (SUV<sub>max</sub>) in pretreatment 18F-fluorodeoxyglucose positron emission tomography in patients with colon cancer and unresectable liver metastases and the relationship of this value with Beclin-1 expression was studied and evaluated .

RIPK3 expression was investigated as a potential predictive and prognostic marker in metastatic colon cancer.

The diagnostic value of 68Ga-PSMA PET/CT in patients with biochemical recurrence after radical treatment of prostate carcinoma has been studied and proven.

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

The prognostic and diagnostic value of increased maximum standardized value (SUV<sub>max</sub>) 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.

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.

### 2. Scientific-applied and methodological contributions:

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

The role of 18F-FDG PET/CT as an imaging modality in detecting progression in calcified metastatic serous papillary cystadenocarcinoma of the ovary in negative conventional imaging studies has been studied and proven.2. Научно-приложни и методологични приноси:

- The high specificity and sensitivity of 18F-FDG PET/CT in the diagnosis of bone lesions in multiple myeloma compared to conventional radiography was assessed.
- The role of 18F-FDG PET/CT as an imaging modality in establishing progression in calcified metastatic serous papillary cystadenocarcinoma of the ovary with negative conventional imaging studies has been studied and proven.

- The high sensitivity and negative predictive value of FDG PET/CT 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, has been evaluated.
- The superior role of 18F-FDG PET/CT as an effective imaging method compared to CT-CE for the assessment of extranodal involvement of diffuse large B-cell lymphoma (DLBCL) has been proven.
- False-positive results providing data on progression from performed 18F-FDG PET/CT in patients with metastatic melanoma and chondrosarcoma were evaluated and studied.
- The role of 18F-FDG PET/CT as an imaging method in the search for primary tumor foci and determining the site of biopsy was evaluated.
- The role of 68Ga-PSMA as an imaging method in the diagnosis of distant metastatic lesions in the initial staging of patients with high-risk prostate carcinoma has been studied and proven.
- The role of 18F-FDG PET/CT in monitoring the complete clinical response from chemotherapy and radiotherapy in patients with malignant epithelial tumors of the head and neck has been studied and proven.
- A false-positive result providing data on progression from a performed 18F-FDG PET/CT in a patient with biliary tract carcinoma was evaluated and investigated.
- The role of MRI in the initial staging and planning of radiotherapy in patients with locally advanced nasopharyngeal carcinoma was studied.
- MRI enables precise visualization of tumor invasion and precisely defines the volume of treatment.

### **3. Applied contributions in clinical practice:**

- The role of 18F-FDG PET/CT as a restaging method reporting progression in a patient with a malignant tumor of the peripheral nerve sheaths developed on the basis of neuromatosis was evaluated.
- The role of 18F-FDG PET/CT as a non-invasive imaging method offering a great opportunity to successfully identify the localization of hitherto undetected primary tumors in data of only metastatic cervical lymph nodes from squamous cell carcinoma was investigated.
- Literature data confirming 18F-FDG PET/CT as a method with an important role in nodal and distant staging of head and neck epithelial carcinomas and complementing the results of conventional imaging studies were confirmed.
- The role of PET/CT in the diagnosis and staging of early and advanced mammary carcinoma has been evaluated and proven.

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

### **III. Others**

- Functional abnormalities in patients with essential tremor using 18F-FDG PET/CT were studied and evaluated and new data on possible changes in Broca's area, visual areas and anterior cingulate cortex were provided.
- 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 PCA and the accompanying pathology, which determine the therapeutic behavior in these patients. Проучено и е установено, че нивата на свободен тироксин при смив след тънкоиглена аспирационна биопсия на токсични възли на щитовидната жлеза са значително по-високи от околния паренхим и корелират с хормоналните промени.
- The role of dynamic renal scintigraphy with 99mTc-DTPA in the diagnosis of congenital hydronephrosis was evaluated. Dynamic renal scintigraphy allows to determine the degree of urodynamic dysfunction. It can be used not only to diagnose hydronephrosis, but can be one of the leading methods for subsequent functional assessment after corrective surgery.
- The key role of 18F-FDG PET/CT as an imaging modality in the diagnosis of complications of infective endocarditis was assessed.

From the mentioned contributions, it is obvious that Dr. Borislav Chaushev actively participates in the development and application of the latest achievements in the development of nuclear gastroenterology, neurology, oncology and metabolic therapy.

### **IV. Teaching activity**

Prof. Chaushev conducts lectures and exercises for fourth-year Bulgarian and foreign medical students, dental medicine, nurses, Varna Medical College (x-ray laboratory assistants). Participates in the examination committees of the above-mentioned students.

Under his leadership, four doctoral students have obtained the ONS "Doctor". Four specialists have successfully passed the state exam in nuclear medicine. Participates in the state examination commission for a specialty at the Ministry of Health. Actively participates in the basic course in nuclear medicine with lectures.

Since 2018, he is the head of the Department of "Periodontology and Dental Implantology", Faculty of "Dental Medicine", Medical University "Prof. Dr. Paraskev Stoyanov" - Varna", which undoubtedly proves his organizational and administrative experience.

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 for "Nuclear Medicine and Metabolic Therapy" UMBAL "Sveta Marina" Varna and Medical University "Prof. Dr. Paraskev Stoyanov" Varna.

He is a member of the Academic Council of the Medical University "prof. Dr. Paraskev Stoyanov"-Varna.

**Conclusion:**

Given the above-mentioned scientific contributions, the scientific, teaching, clinical and administrative experience of Assoc. Prof. Chaushev, 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. Ph.D. Paraskev Stoyanov" – Varna, and I recommend to the members of the Scientific Jury to award Associate Professor Dr. Borislav Georgiev Chaushev the academic position of "Professor".

Professor Dr Boyan Balev. .... 

Варна, 20.09.2022 г.