To: The Chairman of the Scientific Jury,
Faculty of Dental Medicine,
at Medical University – Varna

REVIEW

Subject: Announced competition for awarding the Academic title "***Professor***" in the **specialty "Nuclear Medicine"**, Higher education area 7. "Health care and Sports" in the professional domain 7.1. "Medicine" and scientific specialty **"Medical radiology and x-ray imaging (incl. use of radioactive isotopes)**" for the needs of the Department of Periodontology and Dental Implantology, Faculty of Dental Medicine of MU-Varna

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Procedure details:

Following the decision of the Faculty board of the MU - Varna and the Order of the Rector of the MU - Varna, the competition for the Academic position of "***Professor***" in "Medical radiology and X-ray imaging (incl. use of radioactive isotopes)" was announced in the State Gazette, issue 41/03.06.2022.

By order of the Rector of MU-Varna (No. P-109-313 of 29.07.2022) and decision of the Scientific jury, I have been designated as a member of the Scientific Jury and to prepare an opinion.

Only one candidate submitted documents for participation in the competition:
Assoc. Prof. Borislav Georgiev Chaushev, MD, PhD

I received from the Career Development department at the MU - Varna all the materials necessary for the preparation of the present opinion.

My review is in accordance with the Law on the Development of the Academic Staff in the Republic of Bulgaria (LDASRB), the Rules for its Application and the Rules for the Development of the Academic Staff at the Medical University "Prof. Dr. P. Stoyanov" - Varna

1. Professional details of the applicant

Assoc. Prof. Dr. Borislav Chaushev, MD was born on June 13, 1974. in the city of Varna. He completed his medical studies in 2001 at MU – Varna. In 2007 he acquired specialty in "Nuclear Medicine". In 2010 he defended a PhD thesis on the topic "Nuclear-medical methods for establishing disorders in the motor-evacuatory function of the stomach in various diseases" for the award of the educational – scientific degree "Medical Doctor" in the scientific specialty "Medical radiology and X-ray imaging (including the use of radioactive isotopes). Since his graduation to the present moment, Assoc. Prof. Dr. Chaushev has been working in the Department of Nuclear Medicine and Metabolic Brachytherapy, University Hospital "St. Marina", Varna, as in 2020 he was elected Head of the Department. His academic journey started in 2006 as an Assistant Professor, passing through Senior Assistant Professor since 2012 until 2015, and in 2015 he was elected Associate Professor. Since 2018 Assoc. Prof. Dr. Chaushev has been elected Head of the Department of Periodontology and Dental Implantology, Faculty of Dental Medicine, MU-Varna. He speaks English. He is a member of the Academic Council of MU-Varna.

1. Evaluation of the applicant's quantitative and qualitative indicators

General scientometric indicators	After „Assoc. Prof."
• Full-text publications	16
• Participation in monographs and textbooks	2
• Participation with reports in scientific forums with printed summaries	17
• Participation in scientific forums in the country home and abroad, with program	23

Assoc. Prof. Dr. Borislav Chaushev, MD. has submitted 112 scientific papers for participation in the current competition, **35 of which** were published after the award of the "Associate Professor" academic position.

In the aforementioned scientific works, Assoc. Prof. Chaushev is the sole or first author in 3 (9%), second author in 5 (14%), and third and subsequent author in 27 (77%). Of these, 10 were published in refereed and indexed scientific journals. Assoc. Prof. Chaushev is a co-author in 2 published monographs. All scientific works of the applicant are characterized by great depth, are up-to-date in scientific practice and have a contributing character. The

latter is also expressed in publications abroad, the large number of citations and the high impact factor.

Extent of citations

According to the academic reference prepared by the Library of the MU – Varna, based on reviewed de viso sources provided by the applicant, Assoc. Prof. Borislav Chaushev and the automated information from the foreign databases Web of Knowledge, Scopus and Google Scholar, more than 50 citations were found.

Impact factor

The total impact factor of Assoc. Prof. Dr. Borislav Chaushev, according to the reference provided by the Library of MU-Varna, is 146.547. Proof of the scientific value and relevance of his works.

2. Academic teaching activity of the applicant

From the provided report on the teaching activity of Assoc. Prof. Dr. Borislav Chaushev MD, it is clear that it is very diverse and includes teaching students of medicine, dental medecine, radiation technicians and interns. He teaches both Bulgarian and English language courses to students. The academic load is sufficient compared to the standard established at the MU-Varna. Assoc. Prof. Chaushev supervised the specialization of four medical doctors, all of whom having successfully acquired a specialty in Nuclear Medicine. He is a regular lecturer in the postgraduate courses in Nuclear Medicine at MU-Varna. Under his supervision, four PhD students have successfully obtained the ESD Doctor. He is a member of the state examination committee for the Nuclear Medicine specialty at the Ministry of Health.

3. Main scientific and applied scientific contributions and their significance

Scientific works presented by Assoc. Prof. Dr. Borislav Chaushev MD, are summarized thematically in three scientific directions: Nuclear Gastroenterology, Nuclear Oncology, Others.

The thematic analysis of the scientific production of Assoc. Prof. Dr. Borislav Chaushev shows that his activity is greatest in the field of Nuclear Oncology. This includes investigating and evaluating the role of 18F-FDG PET/CT in various oncological diseases such as cervical cancer, colon cancer, NSCLC, myeloma, head and neck tumors, lymphomas, synchronous tumors and metastases, ovary cancer, metastatic melanoma and chodrosarcoma, cancer of unknown primary, carcinoma of the bile ducts, malignant tumor of the peripheral nerve sheaths, breast cancer. The scientific interest of Assoc. Prof. Chaushev also includes research and evaluation of the diagnostic value of 68Ga-PSMA PET/CT in prostate cancer, an imaging method that, due to its specificity and sensitivity, prevails in clinical practice. This speaks of the breadth of scientific research and clinical competence and experience of Assoc. Prof. Chaushev.

The scientific contributions that can be derived from these works are as follows:

1. The role of 18F-FDG PET/CT has been studied and proven to demonstrate asymptomatic early recurrences in cervical carcinoma with high SCC values but with a negative result from conventional imaging methods at follow-up. It has been found to be suitable for staging and follow-up of women with this tumor for diagnosis of distant metastases.
2. For the first time in Bulgaria, the predictive and prognostic effectiveness of SUVmax at 18F-FDG PET/CT before the treatment of patients with colorectal cancer and inoperable liver metastases and the relationship of this value with the expression of Beclin-1 was studied and evaluated. High SUVmax values were shown to be significantly associated with worse overall survival, as well as the presence of an inverse negative correlation between Beclin-1 and SUVmax values.
3. The diagnostic value of 68Ga-PSMA PET/CT has been studied and proven in biochemical recurrence of prostate cancer after radical treatment. 68Ga-PSMA PET/CT was found to be superior to CT for detection of local recurrence and other recurrent lesions even at low PSA values.
4. The prognostic and diagnostic value of elevated SUV max in regional lymph nodes in NSCLC patients before treatment was investigated, and its association with poor overall survival was demonstrated.
5. It has been studied and found that the degree of 18F-FDG accumulation in PET positive lesions does not always represent malignancy, which requires the diagnosis to be confirmed by fine needle biopsy.
6. The high diagnostic value of 18F-FDG PET/CT as an imaging method for establishing synchronous tumors and distant metastases was proven for the first time in Bulgaria.

Contributions of a scientific and applied nature are:

1. The diagnostic value of 18F-FDG PET/CT was evaluated as an imaging method in the detection of local recurrence of a synchronous tumor of the larynx during restaging of primary colorectal carcinoma.
2. Biopsy with histological verification has been found to be the method of choice in distinguishing inflammation caused by talc pleurodesis or malignant infiltration, in case of increased accumulation of FDG PET/CT in areas of pleural compaction in patients with pleural effusions and pneumothorax.
3. The high specificity and sensitivity of 18F-FDG PET/CT was established in the diagnosis of bone lesions in multiple myeloma compared to conventional radiography.
4. The role of 18F-FDG PET/CT has been studied and proven as a method superior to conventional imaging studies for proving progression in metastatic calcified serous papillary cystadenocarcinoma of the ovaries.
5. The high sensitivity and negative prognostic value of 18F-FDG PET/CT was established as a non-invasive method for establishing local recurrence in

squamous cell carcinomas of the head and neck, in the presence of diagnostic doubt after physical examination / endoscopy.

6. The superiority of 18F-FDG PET/CT over CT for evaluation of extranodal involvement of DLBCL has been demonstrated.
7. False-positive 18F-FDG PET/CT results have been demonstrated in relation to progression in metastatic melanoma, chodrosarcoma, and biliary tract carcinoma.
8. The role of 18F-FDG PET/CT in evaluating tumors of unknown primary and determining a biopsy spot was evaluated.
9. The role of 68Ga-PSMA PET/CT has been studied and proven in detecting distant metastases in initial staging of high-risk prostate carcinoma.
10. The role of 18F-FDG PET/CT has been studied and proven for the assessment of complete clinical response after chemoradiation in head and neck carcinoma.
11. The role of 18F-FDG PET/CT was evaluated as a restaging method reporting progression in a patient with a malignant tumor of the peripheral nerve sheaths developed on the basis of neuromatosis.
12. The role of 18F-FDG PET/CT was studied for detection of primary tumors in established metastatic cervical lymph nodes from squamous cell carcinoma with an unknown primary tumor.
13. According to the available literature, the study confirming the role of 18F-FDG PET/CT for nodal and distant staging of head and neck epithelial tumors and complementing the data from conventional imaging studies is confirmatory.
14. The role of 18F-FDG PET/CT has been evaluated and proven for the diagnosis and staging of breast carcinoma in early and advanced stages.
15. The role of MRI has been studied and proven for the initial staging of locally advanced nasopharyngeal carcinoma and radiotherapy treatment planning through correct diagnosis of intracranial invasion in T4 tumor and more accurate definition of the target volume compared to 18F-FDG PET/CT.

Another direction in the works of Assoc. Prof. Chaushev with a significant contribution of national importance is nuclear gastroenterology. Assoc. Prof. Chaushev's dissertation thoroughly examines, for the first time in Bulgaria, the role of gastroscintigraphy in dysautonomous manifestations of Parkinson's disease, Multiple Sclerosis, as well as functional disorders in diabetes mellitus to assess the motor-evacuatory function of the stomach, in conditions of normal nutrition. Serial gastroscintigraphy is proposed in the diagnostic algorithm of these diseases. For the first time, the early application of serial gastroscintigraphy in dysautonomous manifestations of Parkinson's disease and multiple sclerosis is recommended for the timely treatment of scintigraphically detected gastric atony and better absorption of medications from the therapeutic regimen in these diseases. 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 was suggested allowing the assessment of gastric motility in natural conditions and the established protocol for achieving high informativeness of the applied method-serial gastroscintigraphy.

In the field of non-oncology nuclear medicine:

1. A significant contribution is the proven key role of 18F-FDG PET/CT as an imaging method for the diagnosis of complications of infective endocarditis.
2. Study and evaluation of functional abnormalities in patients with essential tremor with 18F-FDG PET/CT is of a contributing nature. Probable changes were found in Broca's area, visual areas and anterior cingulate cortex.
3. Another development with a contributing nature is the assessment of the role of dynamic renal scintigraphy with 99mTc-DTPA in the diagnosis of congenital hydronephrosis and subsequent functional assessment after corrective surgery. It makes it possible to determine the degree of urodynamic dysfunction.
4. Helpful is the study of free thyroxine levels in washout after fine-needle aspiration biopsy of toxic thyroid nodules, which are found to be significantly higher than the surrounding parenchyma and correlate with hormonal changess.

Assoc. Prof. Chaushev also presents scientific works outside the field of nuclear medicine.

1. The study for the first time in Bulgaria of RIPK3 expression as a potential predictive and prognostic marker in metastatic colorectal cancer is beneficial and it was found that high RIPK3 expression is associated with longer overall survival.
2. The study on MRI in the diagnosis of pyogenic liver abscesses is also of a contributing applied nature. The advantage of MRI is confirmed over other imaging methods for diagnosing the root cause of PLA and the accompanying pathology, which determine the therapeutic behavior in these patients. .

CONCLUSION

Assoc. Prof. Borislav Georgiev Chaushev, MD, PhD is a well-established and prominent Bulgarian nuclear medicine physician with a considerable volume and quality of scientific production with a certain contributing character in theoretical and practical nuclear medicine, a proven academic teacher and researcher. He demonstrates enviable leadership and organizational qualities.

In view of the covered stated criteria of MU-Varna in the field of scientific research after the Law on the Development of the Academic Staff in the Republic of Bulgaria, the personal, professional and business qualities of the applicant, I believe that Assoc. Prof. **Borislav Georgiev Chaushev**, MD, PhD is a worthy applicant for the title of "Professor" and I confidently recommend him to the esteemed members of the Scientific jury to award him the academic position "Professor" in the scientific specialty "Medical radiology and X-ray imaging (incl. use of radioactive isotopes) for the needs of the Department of Periodontology and Dental Implantology, Faculty of Dental Medicine of MU-Varna.

Varna, 10.10.2022 **Reviewer:**

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