

## **Review**

### **On the scientific works of Associate Professor Dr. RADOSLAV YOSIFOV GEORGIEV, PhD**

Candidate for the academic position "Professor"

In the field of Higher Education Health care and sports, Professional direction

7.1 Medicine, Scientific specialty "Image diagnostics",

In a competition announced in the State Gazette No. 83/03.10.2023

**By Professor Dr. Vassil G. Hadjidekov, PhD,**

According to the Order of the Rector of the Medical University - Varna P-109-  
514 of 30.11.2023

In the competition for the academic position "Professor", in the field of Higher Education Health care and sport, Professional direction 7.1 Medicine, Scientific specialty "Diagnostic Imaging", as announced in the State Gazette No. 83/03.10.2023, the only candidate is an Associate Professor Dr. Radoslav Yosifov Georgiev, PhD. The materials presented by the candidate are detailed, comprehensive and fully meet the requirements of Section IV of the Regulations for Academic Development at the University of Varna.

#### **1. Analysis of the candidate's career profile**

Associate Professor Dr. Radoslav Georgiev was born in 1976. He graduated from secondary education in 1995 at an English language high school in the city of Dobrich, and Medicine - in 2001 at the Medical University - Sofia. In 2003, he was elected as an assistant-professor at the Department of Imaging and Radiotherapy at the Medical University of Varna. Since 2008, he has a recognized specialty in Diagnostic Imaging. In 2015, he successfully defended a dissertation for the award of the educational and

scientific degree "doctor" on the topic: "Magnetic resonance diffusion and perfusion for differentiation and evaluation of primary glial brain tumors"

In 2011, he was elected as the senior assistant-professor, and in 2016 - as an Associate Professor in the Department of "Imaging diagnostics, interventional radiology and radiotherapy"

Since 2020, he has been the Head of the Diagnostic Imaging Clinic at "Sveta Marina" University Hospital, Varna.

Associate Professor Georgiev has participated in 17 courses for qualification enhancement and improvement abroad and in our country. He has a total of 143 papers and has participated in international and national scientific forums 52 times.

He is a member of the Bulgarian Association of Radiology, the European Society of Radiology ESR, the European Society of Neuroradiology ESNR. Associate Professor Georgiev will preside over the upcoming Twentieth Anniversary Congress of the Bulgarian Association of Radiology - September 2024.

Fluent in English and German.

## **2. General characteristics of the candidate's scientific works**

For participation in the competition, Associate Professor Georgiev submits 53 titles, all published after holding the academic position of "associate professor". They find a place on the pages of the following journals: Cureus, Journal of IMAB, Journal of Neuro-Oncology, Eurasian Journal of Medicine and Oncology, Hormone Research in Paediatrics, Scripta Scientifica Medica, Topmedica, International Bulletin of Otorhinolaryngology, Global Imaging Insights, Trends in Medecine, Medical & Clinical Resaerch, International trends in Science and Technology, American Journal of Biomedical Science & Research, Heart-Lung Varna, Онкология, Акушерство и гинекология, Българска кардиология, Рентгенология и радиология, Детски и инфекциозни оболести, Хирургия, Варненски медицински форум, Известния на съюза на учените – Варна. The wide range of editions is prominent.

## **3. Evaluation of the candidate's scientific works**

Associate Professor Georgiev's works cover various fields of diagnostic imaging. Neuroradiology and brain tumors occupy a special place in his publication activity, as well as the contribution of modern magnetic resonance techniques in this field. The possibilities of the SIENAX system for volumetry in multiple sclerosis were evaluated. The practical significance of the new classification of glioma multiforme, the genetic and pathological structure of gliomas and their possible relationship with the imaging characteristics of magnetic resonance are commented on in an own material. As a result of extensive clinical experience, interesting cases have been published with this aggressive malignant tumor, as well as the role of Diaphanous homolog (the gene that encodes a protein that stabilizes the cytoskeleton) as a predictor of treatment response. From the comparative neuroradiological and neuropathological studies of particular value, we will also note the reporting of the rare Dysembryoplastic Neuroepithelial tumor in the posterior cranial fossa, of pleomorphic xanthoastrocytoma, as well as of extracranial metastases of a glioblastoma. To the candidate's outstanding series of reported cases of brain tumors, we will add the observed magnetic resonance findings in radiotherapy of a cavernoma. A clinical case demonstrates the correlation between MS and structural epilepsy

An observation of CLIPPERS syndrome is also presented. The arterial spin labeling technique for studying cerebral perfusion is described and the MR images in Moya-Moya syndrome using this technique are demonstrated. Neuroimaging markers of cerebral white matter microangiopathy, a case of multiple sclerosis and Lyme disease are described. Six clinical cases demonstrate the role of magnetic resonance imaging in late forms of leptomenigeal disease to guide radiotherapy, as well as the possible link to lymphatic metastasis through the newly discovered glial lymphatics, the so-called glymphatic system.

It should be noted that all rare cases from practice, published by Associate Professor Georgiev, are of great value, not only because of the exceptional casuistry, but also because of the in-depth analysis, the use of imaging methods that are on the cutting edge, the wide current literature reference, as well as in a number of cases a comparison with pathohistology and other methods.

A case of advanced achromatic sinonasal melanoma is described, with an excellent outcome after combined treatment, without complications such as radiation-induced optic nerve demyelinating syndrome.

Of interest are the published cases of rare syndromes and diseases such as proliferative trichilemmal cysts of the scalp, which can mimic squamous cell carcinoma due to cellular atypia, the so-called empty nose syndrome, Ritscher-Schinzel (RTSC) syndrome

The role of magnetic resonance imaging, pathohistological and immunohistochemical analysis for accurate diagnosis, radiation resistance and prognosis in locally advanced chordomas in the lumbo-sacral and paravertebral regions is indicated. The contribution of the deep learning neural network "CoLumbo" in the interpretation of magnetic resonance images of the lumbar spine was studied.

Extremely rare and with single publications in the foreign literature is the observed case of malignant rhabdoid gastrointestinal stromal tumor with a mixed cell subtype with a ring sign. The LI-RADS system for categorizing findings in patients at high risk of developing hepatocellular carcinoma is critically discussed. The role of magnetic resonance cholangio-pancreatography in the diagnosis of liver abscesses and the proof of a possible connection between the abscesses and the biliary tree, detection of important concomitant pathology is shown.

The possibilities of magnetic resonance diagnostics for morphological and functional assessment of the myocardium in some conditions are also indicated.

Associate Professor Georgiev's works contain a number of theoretical, scientific-practical and methodological contributions. I fully accept the candidate's analysis of the contributions of his works. Of these, I would have highlighted those related to:

- Magnetic resonance studies on various tumors of the central nervous system
- The comparative studies between magnetic resonance findings and pathoanatomical, histopathological, genetic and other studies
- Those with the application of advanced techniques of magnetic resonance diagnostics in tumors and other diseases of the brain

- Critical assessment and application of modern classifications for imaging findings in diseases of various organ systems

- The depth of analysis of the rare case study series

Associate Professor Georgiev participated as an expert in two scientific projects, financed respectively by the Operational Program "Science and Education for Intelligent Growth and the Horizon 2020 Program of the European Commission. (certificate 110-1811/16.102023)

#### **4. Citations of the applicant's publications.**

7 citations of works by Associate Professor Georgiev are presented. A query on the Research Gate platform found 56 citations and determined an h-index of 3.

1. The applicant does not provide his IF information to the papers he has published. A query shows that the IF of the journal Cureus for the years of the 6 articles published there is IF 1.2, and that of the Journal of Neuro-Oncology IF 15.9, or a total IF of 23.1.

#### **5. Evaluation of the teaching activity.**

Certificate No. 099-3027/11.10.2023 of the Medical University - Varna shows that, as of the date of issue, the total teaching experience of Associate Professor Georgiev is 20 years and 10 days. Reference No. 112-54/11.10.2023 indicates that his study load in the last two school years exceeded 100 study hours. Associate Professor Georgiev supervised two doctoral students who successfully defended theses for the acquisition of PhD degree (certificate 109-862 dated 24.10.2023). From the date of acquiring a 5-year internship in the specialty of Imaging diagnostics, Associate Professor Georgiev has supervised seven doctors specializing in Imaging diagnostics.

#### **6. Critical notes**

I have no significant critical remarks in relation to the proposed materials.

#### **7. Conclusion:**

**Associate Professor Dr. Radoslav Yosifov Georgiev, PhD, is an experienced diagnostician, established teacher and researcher, and is among the leading specialists in our country in the field of diagnostic imaging of the nervous system. He has a very wide recognition in professional circles and in our country. The presented publications cover a number of areas of diagnostic imaging, affect current aspects of the application of imaging methods and have theoretical, scientific-practical and methodological contributions. The presented publications and documents meet the national requirements for occupying the academic position "Professor", as well as those from Section IV of the Regulations for Academic Development at the MU-Varna.**

**I give my affirmative vote with conviction and with conviction I invite the respected members of the Scientific Jury to vote for the awarding of Associate Professor Dr. Radoslav Yosifov Georgiev, PhD, to the academic position of "Professor" in Diagnostic Imaging, for the educational needs of the Medical University - Varna.**

**Reviewer:**

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**Prof. Dr. Vasil G. Hadjidekov, PhD**

**Sofia, February 2024**