

R E V I E W

By Prof. Dr. Plamen Stoyanov Bozhinov, DSC.

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Member of the Scientific Jury determined by order P-109-375/22.08.2023r. by the Rector of

In connection with a competition for the academic position of Associate Professor in the field of higher education 7. Health and Sport, professional field 7. 1. Medicine and scientific specialty "Nervous Diseases" for the needs of the Faculty of Medicine and the Department of Nervous Diseases and Neurosciences at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna, and Second Clinic of Nervous Diseases at the University Hospital "St. Marina" - Varna, announced in SG №54/23.06.2023.

Documents for the competition were submitted by a single candidate - Dr. Mihael Emilov Tsalta-Mladenov, Ph.D., Senior Assistant Professor at the Department of Nervous Diseases and Neurosciences at the Medical University of Varna and a neurologist at the Second Clinic of Nervous Diseases of the University Hospital "St. Marina" - Varna.

The candidate has submitted all the necessary documents for participation in the competition, in compliance with the requirements of the Law on The Development of Academic Staff in Republic of Bulgaria, the Regulations for its application and the Regulations for the Development of the Academic Staff of Medical University - Varna.

In accordance with the Regulations for the Development of the Academic Staff of Medical University - Varna, the Rector's Order R-109-375/22.08.2023, and Protocol №1 of the first meeting of the Scientific Jury, I have been appointed to prepare a review of the current procedure for the appointment of Associate Professor.

I. Education and teaching activity:

Dr. Mihael Tsalta-Mladenov was born in 1991 in the town of Varna. Graduated from the Third Natural-Mathematical High School in 2010 in Varna, and in 2016 graduated in Medicine at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna. From 12.12.2016. was

appointed as a resident physician at the Second Clinic of Nervous Diseases of the University Hospital "St. Marina." From 01.06.2018 started his specialization in "Nervous Diseases" at University Hospital "St. Marina" and on 01.01.2023 acquired a specialty in "Nervous diseases". On 26.04.2021, after successfully defending his dissertation on "Quality of life in ischemic stroke patients - clinical-social and neuroimaging studies" at Medical University of Varna, he earned the degree of Doctor. His teaching activity began on 23.01.2018, and until 08.09.2018 he was a part-time assistant at the Department of Nervous Diseases and Neurosciences at the Medical University - Varna, subsequently from 08.09.2018 - a full-time assistant at the Department. Since 24.11.2021 and currently he is a senior assistant professor at the Department of Nervous Diseases and Neurosciences, Medical University of Varna.

He participates in teaching the discipline "Nervous Diseases" in the specialties "Nurse" and "Midwife", as well as "Medicine" and "Dental medicine" - Bulgarian and English language training at the Medical University - Varna. Dr. Mihael Tsalta-Mladenov has more than 5 years of teaching activity in the Department of Nervous Diseases and Neurosciences at Medical university of Varna, which meets the regulatory requirements for holding the position of Associate Professor. His teaching load has met and exceeded the minimum requirement of 100 academic hours per semester for the past 5 years.

Dr. Mihael Tsalta-Mladenov speaks fluent English. He has a diploma for the highly specific activities "Evoked Potentials". He has completed numerous training courses in the country and abroad - Switzerland, Hungary, Croatia, the Netherlands, Spain and Germany.

He is a member of the Bulgarian Medical Association (BMA), the Bulgarian Society of Neurology (BSN), the European Stroke Organization (ESO), the World Stroke Organization (WSO), the International Society of Parkinson's Disease and Movement Disorders (MDS), the European Academy of Neurology (EAN), the International Headache Society (IHS).

II. General characteristics of the candidate's research activities:

The scientific activity of the candidate Dr. Mihael Tsalta-Mladenov, presented by the scientific works subject to presentation in this competition, fully meets the requirements of the Law on The Development of Academic Staff in Republic of Bulgaria, the Regulations for its

application and the Regulations for the Development of the Academic Staff of Medical University - Varna.

Dr. Mihael Tsalta-Mladenov submitted a total of 31 scientific papers in the competition for the position of Associate Professor. The publications include: one Dissertation and an abstract for the degree of PhD; ten articles equivalent to a dissertation; thirteen publications and reports published in scientific journals, referred and indexed in world-renowned databases of scientific information; six publications and papers published in non-referred peer-reviewed journals or published in edited collective volumes; one full-text publication in scientific journals and collections, above the minimum scientific-metric requirements for the position of Associate Professor;

Dr. Mihael Tsalta-Mladenov is the first author of 21 (67.7%) of the scientific papers submitted for review, and in the rest he is the second or consecutive author.

The candidate has submitted a list of 13 citations in national and foreign journals, as well as an appendix with an impact factor (IF) according to the journals in which the scientific papers are published, reaching a total impact factor of 71.348.

The scientific production is widely available in the candidate's scientific profiles - GoogleScholar, ResearchGate, ORCID, Web of Science and Scopus. The reference according to Mihael Tsalta-Mladenov's GoogleScholar profile shows a total of 44 citations, h-index 3, which exceeds the scientific materials submitted for review.

The candidate also shows high activity in various scientific projects: Project №19020 of the Science Fund: "Electronic registry of stroke, diabetes and diabetic retinopathy to study the epidemiology of the diseases and the effectiveness of their management"; Project No. 19013 of the Science Fund - "Continuous glucose monitoring in type 2 diabetes mellitus - relation to diabetic retinopathy and diabetic nephropathy" and Project No. 21015 of the Science Fund - "Molecular mechanisms of action of cytochrome c: new evidence in support of neuroprotective and antioxidant effects".

III. Analysis of the candidate's scientific production by fields:

The main scientific areas are: vascular diseases of the nervous system, neuroinfections, movement disorders, neurological complications of somatic diseases, hereditary diseases of the nervous system and rare neurological diseases. Based on this, some of the main contributions of the candidate are divided into the following areas:

– *Vascular diseases:*

Research on quality of life (QoL) in patients who have had ischemic stroke, their risk profile and factors influencing stroke outcome occupy a central place in the candidate's scientific production. Both the stroke severity and the individual QoL of the patients were compared based on the conduct of differentiated treatment in the acute phase. The candidate established statistically reliable patterns between specific indicators that are of a certain scientific and applied contribution for the country.

Confirms the role and determines the relative risk associated with ischemic stroke of the most common vascular risk factors (adjustable and unadjustable), and identifies the high prevalence of hypertension and dyslipidemia, and among higher age groups that of diabetes mellitus and rhythm-conduction disorders(A1, Γ8.1, Γ7.3, Γ7.9, Γ8.1).

A meta-analysis demonstrating the influence of some genetic factors on the risk of ischemic stroke in young adults (B4.10, Γ7.12).

For the first time in our country, a comprehensive study of quality of life after ischemic stroke was conducted, identifying the most affected aspects of life in the first three months after acute stroke and identifying the negative predictive value, in terms of QoL, of the factors - older age, female sex, lower level of education and active work at the onset of stroke, high NIHSS score, stroke with anterior cerebral circulation, and prolonged hospital stay(A1, B4.4, B4.6 and B4.8).

Demonstrates the multifactorial impact of ischaemic stroke (IS) on the lives of acute stroke survivors, with quality of life remaining permanently reduced within the first three months after acute stroke, and the most affected aspects being social activities, movement, activities of daily living, and those performed with the affected arm(A1, Γ7.2 and Γ8.2).

Compares quality of life in patients with intravenous thrombolysis (IVT) and those without differential treatment(B4.6.).

– *Neuroinfections:*

Rare clinical cases of bacterial meningitis complicated by multiple ischemic strokes (B4.9), cavernous sinus thrombosis in the course of purulent sphenoid sinusitis (Г7.13) and Guillain-Barre syndrome in COVID-19 infection (Г7.7) are presented.

– *Movement disorders:*

Describes the successful use of deep brain stimulation (DBS) in a patient with late Parkinson's disease and medication intolerance (Г7.8).

Dr. Mihael Tsalta-Mladenov co-authored and discusses the indications for DBS in movement disorders, the mechanism of action, as well as the specifics of neuromodulation in these patients in the practical manual "Deep Brain Stimulation - When and How?", which is not attached to the review documents for this competition.

– *Rare neurological diseases:*

The following rare clinical cases have been described: a patient with multisystem, recurrent vasculitis - Behcet's disease (B4.2); diabetic striatopathy as the first manifestation of undiagnosed type II diabetes mellitus (B4.7); recurrent strokes due to congenital antithrombin III deficiency (Г7.5.); hereditary spastic paraplegia (HSP), with a rare variant in the RTN2 gene (c.232C>T(p.Arg78Cys))(Г7. 11.); acute ischemic stroke (AIS) due to myxoma (B4.1).

IV. Main scientific and applied contributions:

The main scientific and applied contributions can be summarized as follows:

1. For the first time in our country, a prospective three-month study of the quality of life of patients who have had an acute ischemic stroke was conducted.
2. For the first time in our country, a comparative analysis assessing quality of life in patients with ischemic stroke in relation to the treatment (differentiated or undifferentiated) was performed.

3. It is proven that the Stroke Impact Scale 3. 0 can be successfully applied to longitudinally objectively monitor quality of life after ischemic stroke and assess its dynamics in different domains of functioning.
4. The aspects of life most commonly affected in patients who have had an ischaemic stroke up to the third month after the stroke have been identified.
5. A multifactorial influence on health, psychological, social aspects of life in the post-stroke period has been established, among which certain vascular risk factors, baseline stroke severity, and changes in the brain parenchyma play a leading role.
6. Confirms the role of vascular risk factors in the pathogenesis of acute ischaemic stroke, with untreated arterial hypertension, rhythm-conduction disturbances, diabetes mellitus, alcohol abuse and smoking.
7. The natural course of recovery after acute ischemic stroke is confirmed, and regardless of the treatment, a certain pattern is followed, the quality of life remains permanently reduced, but the most pronounced recovery is observed in the first three months after the stroke.
8. A meta-analysis was conducted demonstrating the influence of certain heritable genetic factors on the risk of ischemic stroke in young adults.
9. Rare clinical cases of theoretical and practical interest for clinical practice are described.
10. The indications and criteria for deep brain stimulation in patients with movement disorders are described.
11. A clinical case presenting the initial experience of deep brain stimulation as an assisted therapy in a patient with advanced Parkinson's disease is described.

V. Conclusion:

In conclusion, the presented scientific production, scientific and applied contributions, qualifications, teaching and clinical activities, in the competition for the academic position of Associate Professor, are fully sufficient in volume and meet the regulatory requirements of the Law on The Development of Academic Staff in Republic of Bulgaria, the Regulations for its

application and the Regulations for the Development of the Academic Staff of Medical University - Varna.

All of the above gives me the conviction to give my positive review and to propose to the esteemed members of the Scientific Jury to vote positively for Dr. Mihael Emilov Tsaltamladenov, Ph.D., to take the academic position of "Associate Professor" in the scientific specialty "Nervous Diseases" at the Department of Nervous Diseases and Neurosciences of the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna.

Date:

16.10.2023

Prepared the review:



Prof. Dr. Plamen Stoyanov Bozhinov, DSC.