To the Chairman of the Scientific Jury,

determined by order №243 / 01.06.2021

of the Executive Director and the Procurator of

Acibadem City Clinic University Hospital Tokuda – Sofia

REVIEW

By Prof. Dr. Tchavdar Nikolov Shalganov, MD, PhD

Professor of Cardiology at the National Heart Hospital – Sofia

Member of the Scientific Jury for the competition for the academic position "Associate Professor" in the scientific specialty 03.01.47. Cardiology, determined by order №243/01.06.2021 of the Executive Director and the Procurator of Acibadem City Clinic University Hospital Tokuda – Sofia by decision of the Scientific Council with protocol №35/18.03.2021.

Subject: Competition for the academic position "Associate Professor" in the field of higher education 7. "Health and Sports", scientific field "Medical Sciences", professional field 7.1 "Medicine", scientific specialty 03.01.47. Cardiology, in the Clinic of Cardiology, Department of Invasive Electrophysiology of Acibadem City Clinic University Hospital Tokuda EAD, announced in SG, issue 27 / 02.04.2021

The only candidate is Dr. Vassil Borislavov Traykov, MD, PhD, Head of the Department of Invasive Electrophysiology at the Clinic of Cardiology of Acibadem City Clinic University Hospital Tokuda EAD and a part-time assistant at the Medical Faculty of Sofia University "St. Kliment Ohridski".

The candidate has submitted in time the documentation necessary for the preparation of this review, in accordance with the requirements of the Academic Staff Development Act, the Regulations for the implementation of the Act, and the Regulations for the development of the academic staff in Acibadem City Clinic University Hospital Tokuda.

I have no conflict of interest with the candidate to declare. We have not had any common publications or scientific projects in the last 10 years. In 2019, at the invitation of Markus Zabel, principal investigator and coordinator of the European project EU-CERT-ICD, we were included in the author team of 2 publications on the project as lead researchers of two separate and independent research teams.

I. Brief biographical data

Dr. Vassil Traykov graduated in medicine with honors from the Medical University – Sofia in 2000. He began working as an intern at the Cardiology Clinic of SBALSSZ – Sofia, and in 2004 became a research associate III degree in the same Clinic. From 2008 to 2010 he specialized in cardiology at the University of Szeged and in 2010 acquired a degree in cardiology at the Medical Faculty of the University of Szeged, Hungary. After returning to Bulgaria in 2011, he started working at Tokuda

Hospital, where he founded the second cardiac electrophysiology laboratory in the country. He headed the Department of Electrophysiology there until now with a break of several months in 2012/2013, when he worked briefly at the Cardiovascular Center City Clinic – Sofia. As of the date of announcement of this competition, he has a total work experience of 16 years as a medical doctor in Bulgaria.

He has national certificates for invasive cardiology since 2011, for cardiac pacing (basic and expert level) since 2013, for invasive electrophysiology (basic and expert level) since 2014. In addition, he has certificates for cardiac pacing and invasive electrophysiology from the European Heart Rhythm Association (EHRA) since 2011. He graduated with a master's degree in public health and health management at the Medical University – Sofia in 2016. In February 2021 he obtained a scientific and educational degree "Doctor" after defending a doctoral thesis on "Catheter ablation in atrial fibrillation: procedural characteristics and role of structures exhibiting trigger activity in the fibrillation process". Part-time lecturer at the Faculty of Medicine of Sofia University "St. Kliment Ohridski". Member of the examination commissions on "Invasive Electrophysiology" and "Cardiac pacing" at the Faculty of Medicine of Medical University – Sofia.

Dr. Traykov is a member of the Bulgarian Society of Cardiologists (BSC), the Association for Cardiac pacing and Electrophysiology in Bulgaria (ACEB), the Hungarian Society of Cardiology, the European Society of Cardiology (ESC) and EHRA. Member of the EHRA Scientific Documents Committee (term 2017-2020) and EHRA National Societies Committee (term 2020-2022). President of ACEB (mandates 2016-2019 and 2019-2022). Scientific secretary of BSC (term 2018-2020). Board member of BSC (current term). Elected future president of BSC (term 2022-2024).

He speaks English, German and Hungarian.

II. Research activity

Research projects

Dr. Traykov is the leader of a research project on "Clinical, biochemical and imaging indicators for assessing the degree of atrial fibrosis: a role in the immediate and long-term success of catheter ablation in atrial fibrillation", funded by a research grant from BSC.

Publications

Dr. Traykov presents a list of a total of 90 publications, of which:

- 1 doctoral thesis for the educational and scientific degree "Doctor"
- 17 scientific abstracts at congresses and conferences – 7 at Bulgarian and 10 at international scientific forums.
- 43 original articles indexed in world databases (Web of Science, Scopus) – 40 in English language in scientific journals with impact factor (he is the first author in 13 of them) and 3 in Bulgarian (he is the first author in 1). For publication №64, the applicant failed to mention that it was published in a scientific journal indexed in Scopus
- 15 original articles not referenced in world databases, of which 1 in English and 14 in Bulgarian (he is the first or sole author in 8). All publications in Bulgarian are in editions included in the National Reference List of NACID

- 8 chapters in manuals, collections, monographs and textbooks in Bulgarian, in 6 of which the candidate is the first or sole author
- 6 chapters in manuals and textbooks in English, in which the candidate is the sole author

From the list of 17 abstracts in scientific forums I do not recognize №75, which is an oral presentation without a printed abstract. Of the remaining 16 abstracts, nine are from international scientific forums and in 8 of them Dr. Traykov is the first or sole author, in 1 – the second author. The other seven abstracts are from national scientific forums and in 4 of them the candidate is the first author.

From the list of 58 original articles №№27, 28 and 29 are actually the same EHRA expert consensus published in 3 different journals (this is common practice for this type of publication), which is why I consider them as 1. At the same time here, I would like to note that in the self-calculation of the scientometric indicators the candidate has correctly treated these three titles as one.

I do not find any data on plagiarism in the presented list of publications.

Citations

The candidate has submitted a citation reference from the Central Medical Library of the Medical University – Sofia (№100/12.03.2021).

According to the reference, the citations in Bulgarian sources are a total of 20. The citations in foreign sources are 690 in the Web of Science database and 315 in the Scopus database with partial overlap between the two databases. The sum of the impact factors of the journals with scientific publications of Dr. Traykov amounts to 87,428.

The **H-index** of Dr. Vassil Traykov in Scopus and Web of Science is **10.**

The author's reference to the candidate's works, as expected, shows a focus on arrhythmology. The publications on the presented list include a variety of original studies, case reports, reviews, expert documents and chapters in collections and manuals, and can be classified into several groups: atrial fibrillation; supraventricular tachycardia; cardiac implantable electronic devices; ventricular arrhythmias and prevention of sudden cardiac death; expert consensus and positions.

Atrial fibrillation is an area in which the author obviously has a great interest – not only his doctoral thesis, but also a number of other publications are focused in this area. From theoretical point of view, the presented works examine the frequency distribution and temporal stability of trigger structures in paroxysmal atrial fibrillation, confirming the role of the pulmonary veins in the initiation and maintenance of atrial fibrillation. The presence of a frequency gradient between the different trigger structures is established, which shows good time stability. From an applied point of view, the candidate's work emphasizes the place and importance of catheter ablation in the treatment of atrial fibrillation, and examines important procedural features, including success and complications, as well as factors for long-term success in pulmonary vein isolation. The candidate has identified an unreported predictor of success, namely the HASBLED scor. The procedural characteristics have also been studied depending on the application of general anesthesia and the advantages of its use in terms of a number of indicators have been confirmed.

In the field of supraventricular tachycardias, the candidate's work has important original contributions of great practical importance – one is based on a quick and simple analysis of the components of intracardiac electrograms obtained from standard catheters, and the other – on an analysis of atrial activation times, also recorded by means of standard catheters. Depending on the results of these analyzes, the mechanism of arrhythmia and the need for transseptal access for detailed mapping of the left atrium in atrial tachycardia is determined, which directly reflects on the safety and duration of the procedure. A modification of the method analyzing the components of the intracardiac electrograms allows to determine the need for transseptal access in left-sided accessory pathways, near the mouth of the coronary sinus, which is again a practical contribution of undoubted importance. When comparing the transseptal access with other accesses, a significant reduction of the procedural radiation dose was found upon ablation of left-sided accessory pathways.

With regard to atrial flutter, the first publications of the candidate concern the typical isthmus-dependent flutter, and subsequently, with the accumulation of experience, his interests spread to the atypical atrial flutter. There are two main contributions and they are both original – one is about the importance of open-heart surgery and the size and location of the atriotomy for subsequent occurrence of typical and atypical atrial flutter, and the other emphasizes the favorable reduction of a number of procedural parameters using intracardiac echocardiography and is obtained from a randomized prospective study.

In the field of ventricular arrhythmias and the prevention of sudden cardiac death the original contributions are in the field of interventional electrophysiology and implantable devices. The candidate participated in a multicenter international registry examining a modification of percutaneous transpericardial access for epicardial ablation, which undoubtedly increases the safety of the method. Several publications are based on an international multicenter study of the clinical efficacy of implantable cardioverter-defibrillators in the primary prevention of sudden cardiac death. A significant reduction in mortality in the general group of patients with these devices was confirmed, but no significant effect was found in the elderly and in diabetes mellitus. In recent years, medical treatment of heart failure in patients with an indication for primary prevention of SCD has become increasingly effective, including with respect to SCD, so finding patient groups that will derive a definite cardioverter-defibrillator benefit is of great importance in terms of clinical benefit, reduction of potential complications and cost-effectiveness.

Some publications confirm the role of catheter ablation in idiopathic ventricular arrhythmias.

The candidate's participation in EHRA working groups and task forces in several expert consensuses and positions is particularly important. This type of publication has an important role to play in promoting uniform diagnostic and therapeutic behavior over the continent and is in fact a guide to conditions that are not covered in detail or at all in the ESC recommendations.

In the field of cardiac pacing, significant publications are in the field of management of infections associated with implantable electronic devices, dyssynchrony in right ventricular pacing and the application of resynchronization therapy.

III. Teaching activity

A certificate of teaching workload was provided by Acibadem City Clinic Tokuda. It is evident from it that for the period 01.01.2016 - 31.05.2021 the teaching load of Dr. Traykov amounted to 4515 hours, of which 3945 hours with graduates, 482 hours for VSD and 88 hours for continuing medical education.

In addition, the candidate has submitted an official note from the Medical Faculty of Sofia University "St. Kliment Ohridski", certifying another 60 hours of teaching work with students as a part-time assistant for the last 2 academic years 2019/20 and 2020/21.

The candidate submitted also a list of 17 participations in scientific forums, which coincide with the published scientific abstracts of various scientific events mentioned in Section II.

IV. Diagnostic and therapeutic activity

I have known the professional development of Dr. Vassil Traykov for many years and I can say without hesitation that he is a well-established specialist with extensive experience in diagnosing and treating cardiovascular diseases. Its professional activity is focused mainly on cardiac arrhythmias in all their manifestations with an emphasis on catheter ablation and cardiac pacing, including with complex devices for the treatment of heart failure and the prevention of sudden cardiac death. He was the first in the country to apply intracardiac ultrasound and transpericardial access for catheter ablations. He has organizational skills, is able to make responsible decisions and is a good team leader.

V. Compliance with the minimum national requirements

Dr. Traykov presented a completed table of compliance in accordance with Regulations for the implementation of the Academic Staff Development Act.

The fulfillment of the minimum requirements by groups of indicators is as follows:

- Group A – completed (50 points)
- Group B – not required for academic position "Associate Professor"
- Group B – completed. Fifteen publications equaling a total of 151.28 points are included, with a minimum of 100 points required.
- Group D – completed. The candidate calculated his score at 520.2 points with a required minimum of 200 points. I recalculated the actual total to 527.7 points, as publication №64 is incorrectly placed in section 8 of group D, while in fact it belongs to section 7 of the same group.
- Group D – completed (165 points with a required minimum of 50 points).
- Group E – not required for academic position "Associate Professor"

Total points: 893.98. The required minimum for academic position "Associate Professor" is 400 points, therefore the candidate not only fulfills it, but also exceeds it more than twice.

VI. Critical remarks

- The self-assessment of the scientometric indicators is incorrect – in group D the candidate has wrongly placed in section 8 a publication, which in fact should be in section 7, with which he has self-harmed.

In conclusion, Dr. Vassil Borislavov Traykov has a serious teaching load, he has acquired a specialty, he is board-certified in various highly specialized activities, has a long medical experience, significant practical skills, and serious experience in research. He has also a large number of publications and very good number of citations. He fulfills and exceeds the minimum national scientometric indicators required by Regulations for the implementation of the Academic Staff Development Act. Therefore, my vote on the candidacy of Dr. Traykov is "positive" and I allow myself to recommend to the esteemed Scientific Council at Acibadem City Clinic UMBAL Tokuda to vote also positively for its approval on the academic position "Associate Professor".

Sofia, 09.08.2021

Prof. Dr. T. Shalganov, MD, Ph.D.

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