**REVIEW**

**from**

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**Executive Director of University Hospital "St. Catherine".,**

**Sofia city**

on

The scientific works and the scientific-teaching activity of

Assoc. Prof. Dr. Dimitar Petrov Nikolov, PhD

Head of the Clinic of Cardiac Surgery,

Acibadem City Clinic UMBAL Tokuda EAD

Subject: Participation in a competition for the academic position of "Professor" in the field of higher education 7. "Health and Sports", Professional field 7.1. "Medicine", scientific specialty "Cardiovascular Surgery" for the needs of the Clinic of Cardiac Surgery " ofAcibadem City Clinic MHAT Tokuda" EAD.

I. Information on the procedure for announcing a competition for the occupation of an academic position "Professor" in the scientific specialty "Cardiovascular surgery", for the needs of the Cardiac Surgery Clinic "Ajibadem City Clinic Umbal Tokuda" EAD

The competition for a full-time academic position "Professor" in Higher Education 7. "Health and Sports", Professional Field 7.1 "Medicine", in the scientific specialty "Cardiovascular Surgery", for the needs of the Clinic of Cardiac Surgery Acibadem City Clinic UMBAL Tokuda ”EAD, was published in the State Gazette No. /1 / 04.01.2022.

By order №15-05-72 / 04.04.2022 of the Executive Director and Procurator of Acibadem City Clinic UMBAL Tokuda EAD, I have been appointed a member of the Scientific Jury for the open competition. At the first absentee meeting of the Scientific Jury it was decided to prepare a review of the scientific papers and research and teaching activities of the candidate.

Assoc. Prof. Dr. Dimitar Petrov Nikolov, PhD, Head of the Clinic of Cardiac Surgery "Acibadem City Clinic UMHAT Tokuda" EAD is the only candidate who submitted documents for participation in the competition within the legally specified period. It meets the requirements of the ZRASRB, the Regulations for its implementation and the Regulations on the terms and conditions for obtaining scientific degrees and holding academic positions in Acibadem City Clinic UMBAL Tokuda EAD:

1. Has obtained the educational and scientific degree "Doctor", in the scientific specialty "Cardiovascular Surgery"

2. He held the academic position of "Associate Professor" for seven years. He is a lecturer and a member of the research team at Acibadem City Clinic UMHAT Tokuda EAD.

3. He is a proven medical specialist in practice with proven scientific and practical achievements.

4. To participate in the competition, present sufficient in number and quality scientific publications in specialized scientific journals and scientific papers, which do not repeat the presented for obtaining the educational and scientific degree "Doctor" and academic position "Associate Professor"

5. Fully meets the minimum national requirements and the requirements of Article 1a, paragraph 2 of the Law on the Protection of Human Rights and Fundamental Freedoms.

6. There is no proven plagiarism in scientific papers.

Based on the coverage of the necessary requirements, Assoc. Prof. Dr. Dimitar Nikolov was admitted to participate in the competition and evaluation by the Scientific Jury.

II. BIOGRAPHICAL INFORMATION ABOUT THE CANDIDATE RELATED TO HIS PROFESSIONAL DEVELOPMENT AND ACTIVITY

Assoc. Prof. Dr. Dimitar Nikolov was born in 1964. He graduated in medicine at the Higher Medical Institute (HMI) in Sofia in 1987. He graduated in general surgery in 1996 and in cardiac surgery- in 2000. From 1991 to 1997 is an assistant professor of cardiac surgery at the Clinic of Cardiac Surgery, University Hospital "St. Catherine". From 1997 to 2007 he held the position of "Chief Assistant" in Cardiac Surgery at the Clinic of Cardiac Surgery, University Hospital "St. Catherine". For the same period he was the head of the transplantology and mechanical heart support department at the same clinic. In 2010 he graduated from the Medical University - Faculty of Public Health - Sofia with a degree in Human Resource Management in Healthcare. In 2012 he successfully defended his dissertation on "Surgical treatment of native infectious endocarditis" for obtaining the educational and scientific degree "Doctor" in "Cardiovascular Surgery", professional field 7.1 "Medicine".

I have known Assoc. Prof. Nikolov for more than thirty years in personal and professional aspect. He is consistent and persistent in acquiring knowledge and experience and at the same time patient and respectful in communicating with his colleagues. During the years of his professional development, from a specialist in cardiac surgery to the head of one of the largest university cardiac surgery clinics in Bulgaria, Assoc. Prof. Dr. Dimitar Nikolov has established himself as prepared in practical terms and with extensive knowledge in cardiac surgery and medical manager. In his surgical practice he has always strived to master and apply modern, advanced diagnostic and operative methods. He introduces into clinical practice various modern methods for the diagnosis and treatment of heart disease.

As a teacher he teaches students and graduates. Organizes and leads courses for postgraduate qualification and continuing medical education on current topics of modern cardiac surgery. He is seriously present in the Bulgarian and international cardiac surgery society with participation in scientific forums, membership in professional organizations and working groups, as well as in various international research projects. For its construction and development as a leading cardiac surgeon and lecturer, the specializations held abroad in reference training centers are also of decisive importance.

Assoc. Prof. Nikolov is the supervisor of two successfully defended doctoral students in the professional field 7.1. Medicine, doctoral program "Cardiovascular Surgery".

Assoc. Prof. Nikolov is a member of authoritative international professional organizations and a participant in working groups for scientific research in the field of cardiac surgery.

In the documents submitted for participation in the competition, the candidate has presented a detailed up-to-date report on his professional development and qualification, as well as on his teaching and research activities.

III. ANALYSIS AND EVALUATION OF RESEARCH ACTIVITIES AND FORMULATION OF SCIENTIFIC CONTRIBUTIONS.

Quantitative criteria for research:

Assoc. Prof. Dr. Dimitar Nikolov presents in the documents for participation in the competition 69 scientific papers distributed as follows:

• Dissertation and abstract - 2

• Publications in scientific journals, referenced and indexed in world databases for scientific information - 9 before holding the academic position of "Associate Professor" and 2 after holding the academic position of "Associate Professor"

• Publications in Bulgarian scientific periodicals - 61

• Participation in monographs and textbooks -1

• Participation in international European and World congresses and symposia - 4

• Participation in national congresses and symposiums - 20

After excluding the dissertation and the abstract from the total number of submitted papers, 67 scientific papers remain for review, of which 27 are after holding the academic position "Associate Professor", 2 publications are in publications with impact factor after "Associate Professor", as the total impact factor is 20,573.

A citation report from the Medical Library of the Medical University of Sofia (Issue No. 147 / 14.03.2022) was presented, in which 59 citations were found. There are a total of 59 Bulgarian citations. 160 citations were found in the Scopus database, and 150 citations in the Web of Science database, as the Scopus and Web of Science databases partially overlap, which is why only citations in Scopus are calculated. The total impact factor is 33,483, and the IF after associate professor is 20,573.

The evaluation of the quantitative criteria of the research activity and publishing activity of Assoc. Prof. Dimitar Nikolov shows that he presents sufficient in number and quality scientific publications in specialized scientific journals and scientific papers that do not repeat those presented for obtaining the educational and scientific degree "Doctor". and there is no proven plagiarism in scientific papers. The evaluation of these works covers the minimum national requirements and the requirements of the normative documents and the Regulations for development of the academic staff of Acibadem City Clinic UMHAT Tokuda EAD for holding the academic position "Professor".

*Scientific contributions to scientific publications and reports presented in the sections on minimum national requirements*

Before associate professor:

Some of the publications are devoted to the analysis of valve prosthetics in patients with valve endocarditis in order to increase the effectiveness of surgical treatment.

Implementation of surgical methods for the treatment of terminal heart failure in Bulgaria (LVAD implantation and heart transplantation).

For the first time in Bulgaria clinical cases have been described with a method of treatment - orthotopic heart transplantation, with a survival of more than one year in patients with end-stage reversible heart failure (HF) III-IV FC according to NYHA, which has exhausted the possibilities for response of drugs and / or other cardiac surgery (11)

For the first time, successful conservative treatment by fibrinolysis in thrombosis of a mechanical left ventricular auxiliary device for maintenance of circulation with laminar blood flow Berlin Heart INCOR system was applied after angiographic INCOR thrombosis. Despite the possible complications of fibrinolysis, this method provides an alternative in the treatment of patients with thrombosis of the ventricular assist device (VAD) (24)

A successful method of implantation of the Berlin Heart INCOR system after Bentall / De Bono surgery has been applied, by innovatively implanting the outflow cannula of the device in the prosthesis used in the Bentall / De Bono operation (25)

Innovative treatment of dissecting thoracic aortic aneurysm (Stanford type B dissection) in Bulgaria has been applied by implantation of an endovascular stent - graft. Effective closure of two intimal ruptures at different levels in the thoracic segment was performed. Effective restoration of blood flow in the true lumen has been achieved, and this method presents a possible alternative in the treatment of aortic dissections.

The endovascular treatment of abdominal aneurysms is developed by placing bifurcation and / or straight endoprosthesis, successfully isolating the aneurysm from the central bloodstream. A good therapeutic result has been achieved without perioperative mortality and a low complication rate, allowing this method to be used as an alternative in patients with abdominal aneurysms and high operative risk.

Development and analysis of methods for brain protection in surgical treatment of thoracic aortic aneurysms involving the arch, as well as innovative methods for surgical treatment of rare cardiac abnormalities.

After Associate Professor:

1. Monograph: "Surgical treatment of native and prosthetic endocarditis"

The monograph is devoted to the main aspects of surgical treatment in patients with native and prosthetic endocarditis. The in-depth review of the scientific literature on the subject examines in detail the frequency, microbiological causes, diagnostic criteria and the most modern diagnostic methods for proving the disease. The types of causative agents and the possibilities for medical treatment are systematized, as well as the terms for its implementation. The main methods and means necessary for the implementation of various types of surgical interventions, adequate to modern standards in medicine, are described. The algorithm and the main steps in performing different types of surgical interventions are presented, personal experience is shared and unresolved issues are discussed. The issue of myocardial protection in patients with prosthetic endocarditis and working LIMA-LAD graft is also considered, a problem which, according to the author, should be well known when it comes to reoperative cardiac surgery. Possible complications are analyzed and risk models predict increased morbidity and in-hospital mortality. There is a place for consideration of the results of the treatment in patients with a proven microbiological cause and in those without an isolated one. The logical conclusion of the monograph is the final chapter with 12 conclusions of the author, based on prospective and retrospective studies on patients with native and prosthetic valve endocarditis. The conclusions are focused on the daily practical activities of cardiac surgeons, in order to assist them in making specific decisions for diagnosis and treatment.

2. After taking up the academic position of "Associate Professor", the participation and publication of research shall be expanded: related to the implementation of a surgical method for minimally invasive surgical treatment in mitral valve prosthesis and / or mitral valve plastics, tricuspid valve diseases and aortic valve prosthesis.

The results of reoperations in cardiac surgery are improved by introducing innovative approaches to reduce complications and improve postoperative results in patients indicated for reoperative treatment.

The technique for placing PERCEVAL seamless valves in high-grade aortic stenosis is also of interest. In patients with severe calcification and evidence of porcelain aorta, reoperative patients, elderly and comorbid patients with high-grade aortic stenosis, aortic valve prosthesis with Perceval seamless valves (LivaNova) was introduced, representing biological valve prostheses that retain the aortic ligament. do not require leaving sewing material. Reduces clamping time and improves the outcome of cardiac surgery.

Standardization of percutaneous endoscopic gastrostomy (PEG) in cardiac resuscitation - is standardized and implemented as a routine method of percutaneous endoscopic gastrostomy (PEG) in cardiac resuscitation, shortening the need to stay in the intensive care unit.

By analyzing the type of valve prosthesis in infectious endocarditis postoperatively and sharing the experience of the clinic, the most optimal time for surgery and the most appropriate valve prosthesis and surgical technique in patients with native valve endocarditis (NVE) is assessed.

Assoc. Prof. Nikolov has participated in a number of scientific forums where he presented interesting reports discussing issues such as the experience of the clinic for ten years in the field of reoperations, as well as surgical treatment of many rare complications related to invasive treatments and rare heart abnormalities.

IV. ANALYSIS AND EVALUATION OF TEACHING ACTIVITIES

The teaching activity of Assoc. Prof. Dr. Dimitar Nikolov is related to the performance of his duties as a lecturer at Acibadem City Clinic UMHAT Tokuda EAD. He is the head of specialists in cardiac surgery, conducts postgraduate specialization courses, is a member of scientific commissions and scientific councils. Head of 2 successfully defended doctoral students in the doctoral program "Cardiovascular Surgery" - Dr. Ivilin Todorov and Dr. Asen Kelchev.

According to the presented report, Assoc. Prof. Nikolov has realized a study load with specialists and continuing medical education of 1298 eq. hours for the last 5 years. This teaching activity is completely sufficient as a basis for holding the academic position of "Professor".

V. ANALYSIS AND EVALUATION OF THE DIAGNOSTIC-TREATMENT AND CONSULTATIVE ACTIVITY

Assoc. Prof. Dr. Dimitar Nikolov is one of the leaders in the country, excellently prepared both theoretically and practically cardiac surgeon and university lecturer. He is an established professional, mastering the most modern methods for diagnosis and treatment of heart disease and their surgical treatment.

His hard work in his professional growth, the opportunities and qualities he has as a specialist cardiac surgeon, the qualities of communicative and ethical in his relations with colleagues and patients professional, make him one of the leading and respected cardiac surgeons in our country. Over the years, he managed with great patience and perseverance to create a team of young and motivated professionals, together with which to make the Cardiac Surgery Clinic of Acibadem City Clinic University Hospital Tokuda EAD a leading highly specialized and high-tech cardiac surgery center of European size.

Assoc. Prof. Dr. Dimitar Nikolov owns and has presented documents for the high level of his diagnostic, treatment, consulting and teaching activities.

All of the above is evidence of his high level of professional competence and quality of research and teaching.

VI. CONCLUSION

The personal qualities and educational qualifications of Assoc. Prof. Dr. Dimitar Nikolov, his professional development and qualification as a doctor and specialist cardiac surgeon his research and publishing activities, teaching activities, as a habilitated university lecturer, show that he fully meets the requirements of ZRASRB and meets and exceeds the national minimum requirements and requirements specified as criteria in the Regulations for the development of the academic staff of "Acibadem City Clinic University Hospital Tokuda" EAD, to hold the academic position "Professor".

I am convinced of my positive assessment and I recommend to the other esteemed members of the Scientific Jury to vote positively for the award of Assoc. Prof. Dr. Dimitar Nikolov, PhD. of the academic position "Professor" in the scientific specialty "Cardiovascular Surgery" for the needs of the Clinic of Cardiac Surgery in "Acibadem City Clinic UMHAT Tokuda" EAD.

Prof. Genco Nachev, MD, DSc