RECENSION

from

Prof.Dr. Dora Marinova Tancheva, PhD

With ORDER of the executive director Prof. dr Asen Baltov, MD from 09.10.2020 pursuant to Article 60, par.2 from Regulations for the development of the academic staff in UMHATEM "N.I. Pirogov" EAD, according to a decision of the Scientific Council with a protocol № НС-04-20/23.10.2020 I was chosen as a member of the scientific jury in the competition for occupying the academic position of associate professor of Anaesthesiology and Intensive care, announced in SG issue 68/ 31.07.2020, to Clinic of Anaesthesiology and Intensive care in UMHATEM "N.I.Pirogov", Sofia.

One candidate has submitted documents for participation in the announced competition- dr Georgi Zhelyazkov Georgiev, MD.

For the competition dr Georgi Zhelyazkov Georgiev had presented the following documents: curriculum vitae, declaration of authenticity of the submitted documents for participation in the competition; application for admission to participation in the announced competition; certificate of recognized specialty in the specialty of anesthesiology and intensive care; Diploma awarding the educational and academic degree Ph.D. of Anaesthesiology and resuscitation; preliminary medical examination card; criminal record certificate; certificate from UMHATEM "N.I.Pirogov" of work experience in the employment record of dr Georgiev; list of scientific publications, Scientific publications; Reference of citations, prepared from Medical University of Sofia- Central Medical Library; Reference for the contribution of dr Georgi Zhelyazkov Georgiev; Addendum 1: Criteria and scientific metric indexes for holding the academic degree and academic position in UMHATEM "N. I. Pirogov"; Reference for accomplishing the minimally required scientific-metric criteria for occupying the position Associate professor, Order of the executive director prof.dr Asen Baltov from 09.10.2020 pursuant to Article 60, par.2 from Regulations from the development of the academic staff in UMHATEM "N.I.Pirogov", according to a decision of the Scientific council with a protocol №НС- 04-20/ 23.10.2020 for determining the composition of the scientific jury in the competition for holding the academic position „Associate professor" of Anaesthesiology and Intensive care announced in SG issue 68/ 31.07.2020 in the Clinic of Anaesthesiology and Intensive care in UMHATEM N.I.Pirogov Sofia; protocol from the first meeting of the Scientific jury in competition, announced in SG issue 68 form 31 of July 2020.

Biographic data and professional development

Dr. Georgi Zhelyazkov Georgiev completed his higher education with a qualification master's degree- doctor in 1999 at the Medical University of Sofia. From December 1999 till May 2002 he worked as an Ordinator in the Centre of emergency medical help in Yambol, branch Elhovo. From 2002 till now he works in the Clinic of anaesthesiology and intensive care in UMHATEM N.I.Pirogov Sofia. In the beginning, he was appointed as intensivist/ anesthesiologist, and from 2006, after winning a competition, he was chosen to become fellow III degree, and from 2010- fellow II degree. From June 2010 to November 2018 he held the position of Head of the Intensive care unit to the Clinic of Anaesthesiology and Intensive care, UMHATEM N.I. Pirogov, Sofia. In 2009 dr Georgiev obtained a specialty in

anesthesiology and intensive care. In 2011 he was chosen as Chief Assistant. Dr. Georgiev's activity is focused mainly on the field of invasive organ support in the treatment of critically ill patients- mechanical ventilator support, prolonged renal replacement, and so on. The huge amount of practical experience that he gained gave him the opportunity to develop and defend a successful dissertation on the topic "Determinants of ventilator dependence and predictors of success in discontinuing mechanical ventilation maintenance" for obtaining the scientific and educational degree Doctor. Through the years Dr. Georgiev has completed a lot of courses for postgraduate training: in Milan, Italy – 2010 and 2011- a course for intensively oriented echocardiography WINFOCUS, in Brussels, Belgium- 2012- Hospital Erasmus- Doppler echocardiography in intensive care, in Sofia, Bulgaria- 2014- Modern techniques for the assessment of myocardial function: from Doppler deformation, in Berlin, Germany- 2015- a course in echocardiography in the intensive care treatment for advanced to ISICEM; in 2020 dr Georgiev obtained a diploma EDEC (European Diploma in Advanced Intensive Cares Echocardiography). Also, from October 2016 to May 2017 he took active participation in the program Learn to teach in the field of organ donation and transplantation, together with DTI/ TPM/ Barcelona University (European project Seeding Life'), as well as in a number of pharmacological studies as a researcher and principal researcher.

Dr. Georgiev is an active member of the Bulgarian scientific association of Anaesthesiology and resuscitation and of the European Society of Intensive Care Medicine (ESICM).

Scientific- research activity

In this competition, dr. Georgiev presents for recension 27 publications- 9 in Bulgarian and 12 in English. The scientific works were published in 2 Bulgarian and 6 foreign journals, as in 12 of the publications dr Georgiev is the first author.

Dr.Georgiev's scientific works were cited 2 times in Scopus and 9 times in other sources- reference from the Central medical library of MU- Sofia (№ PT 322/ 21.09.2020). With the impact factor (IF) of the publications- 32,96 points.

According to the applied reference for completing the minimally required scientific-metric criteria, Dr. Georgi Zhelyazkov Georgiev covers the minimally required requirements to the scientific and teaching activity for holding academic positions.

Analysis of the scientific- research activity

The scientific works of Dr. Georgiev can be differentiated in the following thematic directions: acute respiratory distress syndrome, polytrauma, and sepsis.

1. Acute respiratory distress syndrome

A huge part of the scientific publications is dedicated to the problems connected to diagnostics, demographic characteristics, clinical passing, and the curing approach in patients with acute respiratory distress syndrome. The hemodynamic parameters and the parameters of the oxygen transport were followed. Developments to determine the causes of severe hyperlactatemia in patients with acute respiratory distress syndrome and sepsis have a significant contribution to make. Finding that the high levels of lactate in this group of patients are mainly due to its formation in the lungs, the authors emphasize the importance of this fact for the correct interpretation of the results (1, 3, 6, 7).

Of particular importance are the scientific developments regarding the methods of application of mechanical ventilation in patients with ARDS. A thorough analysis of prognostic possibilities of a number of clinical, hemodynamic, ventilatory and laboratory parameters, as well as the dynamics of relatively poorly studied parameters of respiratory mechanics (respiratory work and its components, PTP, TTI) and oxygen transport (oxygen cost of breathing) during the process of weaning from mechanical ventilation is presented (19). Dr. Georgiev and team prepared a modified recruitment maneuver used in patients with ARDS, finding an effective increase in arterial oxygenation, good tolerance in terms of hemodynamic stability and reduced risk of barotrauma (6).

A substantial contribution is the developed from dr. Georgiev and team, new for the country, a method for continued record and offline analysis of wide specter monitors and ventilators' parameters in the process of weaning from mechanical ventilatory support (12, 13). In a prospective study to determine readiness for the cessation of mechanical ventilation (PSV at zero auxiliary pressure, ZEEP trial) the safety of admission, the importance of applying ZEEP for short periods, and the effect of stopping mechanical ventilation were assessed (14,19).

Other original developments present the prognostic value of poorly studied heart rate verifiability parameters during weaning from mechanical ventilation.

2. Sepsis- etiopathogenesis, prognosis, diagnostic and therapeutic approach

Analyzes have been developed on demographic characteristics, clinical course, concomitant organ dysfunction, and exit, in patients who manifest systemic inflammatory response, post-traumatic sepsis, and septic complications in acute respiratory distress syndrome.

Studies have been performed on the diagnostic and prognostic value of the classical inflammatory biomarkers interleukin-6 (IL-6) and lipopolysaccharide-binding protein (LBP) in patients with two or more SIRS criteria (3,7,9,11).

The diagnostic and prognostic value of serum cardio specific troponin-1 (cTnl) in patients with septic myocardial dysfunction (9), as well as the risk factors for the development of sepsis-induced thrombocytopenia, its prognostic significance, and the role of pathogenetic and substitutional treatment in sepsis (11) has been studied.

In a number of studies, Dr. Georgiev focuses on epidemiological problems and therapeutic options for nosocomial infections during intensive care in critically ill patients. Dr. Georgiev and team monitor the clinical and demographic characteristics, the correlation between clinical and microbiological parameters and the outcome of the disease in a wide range of nosocomial infections (4,5,8,10). He was able to define target groups and investigate the efficacy and safety of preamptive antibiotic treatment protocols developed by the team in patients with Gram (+) and fungal nosocomial infections (4,5,8,10,1516).

3. Studies on the problems in the treatment of patients with trauma

In parallel with an in-depth analysis of the demographic characteristic in patients with polytrauma, the peculiarities of the clinical course, and the wide range of complications, Dr. Georgiev also studied the diagnostic role of serum cardio-specific troponin I (cTnl) in this group of patients (9).

The role of ultrasound examination in the initial treatment and subsequent follow-up in the treatment of trauma patients is discussed.

In two consecutive reviews are shown the most essential aspects in the pathogenesis, as well as a diagnostic and therapeutic approach in trauma-induced coagulopathy (25, 26).

In search of new, more effective methods of treating traumatic shock, Dr. Georgiev presents in a very detailed review avant-garde approaches to resuscitation post-traumatic shock (24)./ Two other studies present in detail the basic physiological concepts, methods for assessing volume status and reactivity, and their clinical application in intensive care patients (22,23).

Contribution

The presented scientific publications are a serious scientific contribution and also of great importance for clinical practice. They show the in-depth knowledge and commitment of Dr. Georgiev in the treatment of critically ill patients. In my opinion, the original developments regarding the treatment of patients with ARDS are of particular importance; the prototype of a computer system developed by Dr. Georgiev and team to support the decisions in the course of terminating the mechanical ventilator maintenance; as well as a new for the country method of continuous recording and offline analysis of a wide range of monitoring and ventilation parameters in the course of termination of mechanical ventilator maintenance.

Dr. Georgiev also develops active teaching activity in the clinic, participating in the practical and theoretical training of medical students and post-graduate students in Anesthesiology and Intensive Care and Emergency Medicine. Works on educational programs for practical training of medical students, participates in research in the field of intensive care and in national and international scientific forums.

Conclusion

The research activity of Dr. Georgiev is characterized by originality, innovation, and practical orientation. The scientific papers submitted for review fully meet the necessary criteria for the academic position of Associate Professor and have undisputed recognition at the national and international levels. The scientific achievements, together with the active teaching activity and the long-term personal impressions, give me grounds to recommend to the honorable members of the Scientific Jury to vote positively for awarding the academic position "Associate Professor" in Anesthesiology and Intensive Care to Dr. Georgi Zhelyazkov Georgiev at the Clinic of anesthesiology and intensive care at UMHATEM “N. I. Pirogov”, Sofia.

19.11.2020 Prof.dr. Dora Tancheva, PhD

City of Sofia