

## REVIEW

By: Prof. Dr. Daniela Valentinova Monova, MD, DSc  
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**Regarding:** A competition for the academic position “Professor”, higher education area 7. Healthcare and Sports, professional field 7.1 Medicine, scientific specialty “Nephrology”, for the needs of the Faculty of Medicine, Medical University - Varna

The competition was announced in State Gazette, issue 8 of 28 January 2020. An additional condition in the competition was stated that the requirement according to Art. 137, al. 1, p. 1 from the Rules for the Development of the Academic Staff of The Medical University-Varna should not be applied, and the sum of the points in p. 13 and p. 22 for Field 7. Healthcare and Sports should be 100 points, where the requirement that no more than 80 points should be from indicator 14, should not be applied.

On the grounds of a decision of the Faculty Council (Record №20 of 16 March 2020) at the Faculty of Medicine and Order of the Rector of the Medical University – Varna (№P-109-193/03.06.2020), I was elected a reserve member of the scientific jury. According to the Resolution of the scientific jury from 16.06.2020 (Record №1/16.06.2020) I was appointed to write a review.

Dr. Atanas Ivanov Kundurdjiev, MD, PhD, Assoc. Professor at the Faculty of Medicine, Medical University – Sofia, Head of the Clinic of Nephrology, University Hospital “St. Ivan Rilski” EAD, Sofia is the only candidate that had submitted his documents for participation in the competition.

### **Brief Professional Background**

Assoc. Prof. Dr. Atanas Ivanov Kundurdjiev was born on July 11, 1957 in the city of Dospat, Bulgaria.

He graduated Medicine in 1983 from the Medical Academy – Sofia (Diploma №003775/198). He has recognized specialties in Internal Medicine (Diploma № 35204/23.03.1990, Bulgarian Medical

Academy – Sofia), Cardiology (Diploma № 38965/15.01.1992, Medical Academy – Sofia) and Nephrology (Diploma №44151/25.01.1995, Higher Medical Institute - Sofia).

Assoc. Prof. Dr. Atanas Kundurdjiev worked consecutively as district physician in the village of Hadjidimovo (1983 - 1985), Resident in Internal medicine (1985 - 1988), Assistant Professor at the Clinic of Cardiology (1988 - 1992), Senior and Chief Assitant Professor at the Clinic of Nephrology (1992 - 2015). In 2013 he defended his PhD thesis on „Cardiorenal syndrome – clinical-instrumental diagnosis and prognosis“, and was awarded a PhD degree (Diploma № 177–Д/2013). In 2015 he was elected Assoc. Professor of Nephrology at the Medical Faculty, Medical University – Sofia. Along with his academic career, Assoc. Prof. Kundurdviev has worked as a Deputy Minister of Healthcare (2000 - 2001 and 01.02.2017 - 04.05.2017), Head of the Council of Directors of University Hospital “Alexandrovska” EAD (2000 - 2001), Head of the Council of Directors of Multidisciplinary Hospital “Blagoevgrad” EAD (2000 - 2003), Executive Director of University Hospital “Alexandrovska” EAD (2001 - 2002), Member of the Council of Directors of University Hospital “Alexandrovska” EAD (2014 - 04.2017), Deputy-Head of the Council of Directors of University Hospital “St. Ivan Rilski” EAD (since 04.2017 – until present), Municipal Councilor at the Sofia Municipality Council (2003 - 2007), Chief Secretary of the Bulgarian Physicians’ Union (2002 - 2003), Chief of the Nephrology Ward at the Clinic of Nephrology and Dialysis at the University Hospital “St. Ivan Rilski” EAD (18.09.2015 - 05.05.2017), Head of the Clinic of Nephrology at the University Hospital “St. Ivan Rilski” EAD (since 05.05.2017 – until present).

Assoc. Prof. Atanas Kundurdjiev is a member of the Bulgarian Society of Cardiology, Bulgarian Society of Nephrology, Dialysis and Transplantation, Bulgarian Association of Ultrasound in Medicine, Physicians’ league in Bulgaria – Best Doctors. He is a member of the Editorial Board of “Annual reports in Hospital Pharmacy”. As s Deputy Minister of Health he has participated in multiple commissions, councils, committees, and work groups of national importance. He has performed expert activities in different fields of healthcare.

## **Research Activities**

### ***Description of the submitted materials for participation in the competition for the occupation of the academic position Professor***

For participation in the competition, Assoc. Prof. Kundurdjiev presented two lists with scientific works, published after the acquisition of the scientific position "Associate Professor": the first (A) is entitled "References for the minimal requirements for "Professor" for Assoc. Prof. Atanas Kundurdjiev", and second (B) – "List of the real full-text publications in scientific journals and scientific collections with enclosed copies, that are not included in the list with publications in accordance with the minimum scientific metric requirements for Assoc. Prof. Atanas Kundurdjiev", consisting of overall 22 articles (including one in press), published after the acquisition of the Academic Position Associate Professor, 2 monographs, 3 chapters in 2 edited collective volumes. I do not accept the monograph №A3 „Gout and Cardio-vascular risk“, because it was written by three co-authors, it comprises of only 158 pages, it has no division protocol and the author has no "individual number of pages that comply with the definition of monograph", in accordance with the Rules of the Medical University – Varna and the Act on the Development of the Academic Staff in the Republic of Bulgaria (ADASRB) and the Regulations for its Implementation. This scientific work I would like to interpret as participation in an article / study, in accordance with the Rules of the Medical University – Varna. The Open Journal of Internal Medicine is referred neither in Scopus, nor in Web of Science, and therefore, it should be put in group G8, and not in G7. All these changes are altering the list with scientific work of Assoc. Prof. Kundurdjiev and the digital expression of the point system for covering the minimum national requirements for the acquisition of the Academic Position "Professor". Assoc. Prof. Kundurdjiev was a Reviewer of the Monograph "The Effective Hospital Management" by Dimitar Dimitrov.

***Analysis of the scientific work of Assoc. Prof. Kundurdjiev after the acquisition of the Academic Position "Associate Professor", in accordance with the requirements of the Act on the***

***Development of Academic Staff in the Republic of Bulgaria and the Regulation for its Implementation.***

***Group A indicators***

1. PhD thesis for conferring PhD degree: 1 (№1A).

***Group B indicators***

3. Habilitation work – Monograph: 1.

Number of publications	Single author	First author	Second author	Third author	Fourth or next author
1 (№A2)	1	0	0	0	0

***Group G indicators***

7. Publications and reports in scientific journals, referred and indexed in world-renowned scientific information databases (Scopus and Web of science only) (different from those, stated in group B, point 4): 12.

Number of publications	Single author	First author	Second author	Third author	Fourth or next author
12 (№№A3,A4, A6,A7,A8,A9, A10,A11,B6, B7,B9,B10)	0	2	7	0	3

8. Publications and reports in non-refereed scientific peer-review journals or in edited collective volumes: 14.

Number of publications	Single author	First author	Second author	Third author	Fourth or next author
11 in non-refereed	0	3	6	0	2



journals in Bulgaria (№№A5,A12, A13,A14,A15, A16,B1,B2,B3, B4,B5)						
3 chapters (№№A17,A18, B8)	3	0	0	0	0	0

### ***Group D indicators***

10. Citations or reviews in scientific journals, refereed and indexed in world-renowned scientific information databases (Scopus and Web of Science only) or in monographs and collective volumes: 6.

11. Citations in monographs and collective volumes with scientific review: 9.

12. Citations or reviews in non-refereed journals with scientific peer-review: 12.

A scientific enquiry from the Central Medical Library (№ PT23/30.01.2020) is included in the candidate's documentation, confirming the presence of 63 Bulgarian citations and 241 citations in Scopus and Web of Science, stating that there is a list of citations enclosed, but this list includes only citations in Bulgarian sources. Of a total of 63 citations, 30 represent "hidden" self-citations that, in accordance with the requirements of the Act on the Development of Academic Staff in the Republic of Bulgaria and the Regulation for its Implementation and the Rules of the Medical University – Varna, cannot be included as Group D indicators. The rest 33 citations are in scientific sources that are referred and indexed in world-renowned scientific information databases (Scopus and Web of Science only) or in monographs and collective volumes, 8 - in monographs and collective volumes with scientific reviewing, 12 citations in non-refereed journals with scientific reviewing, 10 citations in 8 theses.

The review of Assoc. Prof. Kundurdjiev's citations in Scopus, after eliminating the "hidden" self-citations, I found 1 citation in a collective volume with scientific reviewing, 3 citations in scientific journals, refereed and indexed in world-renowned scientific information databases. According to the enquiry, presented by Assoc. Prof. Kundurdjiev, there are 230 citations of the original article „Canagliflozin and Renal Outcomes in Type 2 Diabetes and Nephropathy“, published in New England Journal of Medicine, 2019; 380(24), with authors: Perkovic, V., Jardine, M.J., Neal, B., Bompoint, S., Heerspink, H.J.L., Charytan, D.M., Edwards, R.n, Agarwal, R., Bakris, G., Bull, S., Cannon, C.P., Capuano, G., Chu, P.-L., De Zeeuw, D., Greene, T., Levin, A., Pollock, C., Wheeler, D.C., Yavin, Y., Zhang, H., Zinman, B., Meininger, G., Brenner, B.M., Mahaffey, K.W., for the CREDENCE Trial Investigators and 5 citations of the article „Canagliflozin and Cardiovascular and Renal Outcomes in Type 2 Diabetes Mellitus and Chronic Kidney Disease in Primary and Secondary Cardiovascular Prevention Groups: Results from the Randomized CREDENCE Trial“, published in Circulation, 2019; 140 (9): 739-750, with authors: Mahaffey, K.W., Jardine, M.J., Bompoint, S., Cannon, C.P., Neal, B., Heerspink, H.J.L, Charytan, D.M., Edwards, R., Agarwal, R., Bakris, G., Bull, S., Capuano, G., De Zeeuw, D., Greene, T., Levin, A., Pollock, C., Sun, T., Wheeler, D.C., Yavin, Y., Zhang, H., Zinman, B., Rosenthal, N., Brenner, B.M., Perkovic, V. Both articles have been developed with the joint efforts of overall 933 Investigators who took part in the Clinical Trial CREDENCE, and despite Assoc. Prof. Kundurdjiev was not among the authors who were cited by name, he really was a part of the scientific team of the CREDENCE Trial, on whose behalf the articles are, which is confirmed by the Web of Science reference.

Assoc. Prof. Kundurdjiev had also presented a list of 28 scientific reports in 16 scientific forums in Bulgaria and 9 reports in 6 international scientific forums. I do not accept the scientific reports №№5,6 in the list of Scientific Reports Abroad, because these are published abstracts, not accepted reports on scientific forums abroad. Five of the abstracts are published in scientific journals with impact factor.

### ***Group E indicators***

15. Medical specialties – 3 specialties.

16. Participation in scientific and educational projects – 3 projects.

17. Participation in international scientific or educational project – I do not accept as international the project mentioned in the enquiry, prepared by Assoc. Prof. Kundurdjiev, “Biochemical markers and imaging methods for early diagnosis of the cardio-vascular complications in patients with type 2 diabetes” (scientific project with incoming № 257/14.01.2015 for “Young scientist”), but I refer to it as national project.

18. Chief of a national scientific or educational project – 1 project.

22. Education of interns, residents and PhD-students (seminars and practical education).

Dr. Kundurdjiev has a teaching experience of more than 30 years. He has presented an enquiry by the Department of Internal Medicine, Medical University – Sofia, concerning his teaching hours: 2011/2012 - 263 hours, 2013/2014 - 330,5 hours, 2014/2015 - 324,3 hours, 2015/2016 – 240 hours, 2017/2018 г. – 278 hours, and 2018/2019 - 250 hours, according to which during this period of time he has participated in the studies of: medical students (in Bulgarian and in English), interns, lectures and practical education of doctors in the course of Internal Medicine, General Medicine, individual training in Internal Medicine, Nephrology, Highly-specialized investigation methods (Ultrasound of the urinary system – Doppler-ultrasound in Nephrology). Member of Examination Commissions for students in Medicine and Pharmacy. The annual teaching hours of Assoc. Prof. Kundurdjiev cover and even exceed the requirements of the Medical University – Varna. He has taken part in one Chapter in the Nephrology textbook for residents. Assoc. Prof. Kundurdjiev had wide clinical and teaching experience and he is an accomplished university teacher in the field of Nephrology.

Despite the omissions in the author’s enquiry for the minimum national requirements concerning the characteristics and the places where some of the publications, citations, and scientific projects are put, the scientific works and the other activities stated by Assoc. Prof. Kundurdjiev in relation with the current competition

comply with the minimum national requirements for the acquisition of the scientific position “Professor”, in accordance with the requirements of the Act on the Development of Academic Staff in the Republic of Bulgaria and the Regulation for its Implementation. I have found no plagiarism data in the presented documentation.

### **Fields of Assoc. Prof. Kundurdjiev’s Research Interests**

The research works of Assoc. Prof. Dr. Kundurdjiev are in the following main directions:

#### ***1. Cardio-renal syndrome.***

The increase in the average age of the population globally leads to an increase in the proportion of patients with renal and cardiovascular diseases requiring adequate treatment. Moreover, the high mortality in cardio-renal syndrome requires the development of methods for early detection of the predisposed patients, early diagnostics and adequate follow-up and treatment. These factors make the cardio-renal syndrome a very interesting topic. In this area are the main contributions of Assoc. Prof. Kundurdjiev. In his studies he makes systematic and thorough analysis of the current knowledge on the interactions between the kidneys and the heart, on the use of the imaging methods, the age-related changes in hemodynamics, the renal pathological changes leading to hemodynamic alterations, the types of cardio-renal syndrome and the biomarkers for its diagnosis and prognostic evaluation, the main therapeutic principles in this patients’ population, the specific types of cardio-renal syndrome, the cardio-renal-anemic syndrome, cardio-renal-cachexia syndrome, the cardio-renal syndrome in diabetes. Renal hemodynamics in chronic renal disease and its influence on the general hemodynamics were described. The knowledge in the fields of cardiology and nephrology and the experience in several sonographic techniques help Assoc. Prof. Kundurdjiev to present the main diagnostic and therapeutic principles in cardio-renal syndrome. The individualized approach is of great importance for the quality of life in patients with different types of cardio-renal syndrome. He made the first complex sonographic evaluation of patients with cardio-renal syndrome that allows determination of the hemodynamic risk. The scientific and practical studies of the candidate are mainly in this sphere. He makes critical



evaluation of the different diagnostic and therapeutic principles for the treatment of a wide range of clinical manifestations of the cardio-renal syndrome. The author emphasizes on the need for team approach with multiple profile specialists in the management of both cardiac and renal dysfunction in different types of cardio-renal syndrome, along with balanced approach to the medical treatment. Assoc. Prof. Kundurdjiev recommends the use of multimarker and multimodal approach for the evaluation of the cardio-renal syndrome at the patient's bedside.

## ***2. Hyperuricemia, gout, diabetes, metabolic syndrome.***

The investigation of 201 patients with asymptomatic hyperuricemia (52) and gout (149), with or without diabetes, has found that diabetes and tophi are predictors of increased cardiovascular risk. These studies have large social impact and are the first of their kind in our country. The authors have found no difference in the Framingham Risk Score (FRS) between diabetics and non-diabetics, irrespective of the fact that the complex multimodal ultrasound evaluation does find differences in the individual parameters of the heart and the carotid arteries. The authors underline that the heart and carotid involvement is more pronounced in subjects with type 2 diabetes. They measure the dimensions of the left atrium, the intima-media complex thickening and the resistive index of the common carotid arteries. Their results suggest that in subjects with tophi and diabetes the morphological and functional derangement of the heart parameters is more pronounced than in non-diabetics, that is in harmony with the literature (validation results). The results of this study suggest that gout, and especially tophi, are associated with left-ventricle diastolic dysfunction and increased size of the left atrium. The authors perform a follow-up of the cardio-vascular and renal changes in patients with gout and observe derangement of the left-ventricular systolic and diastolic function. They describe a tendency for significant thickening of the intima-media complex in individuals with eGFR < 90 ml/min. These patients show no differences in the FRS and in the functional systolic and diastolic parameters, irrespective of the presence of concomitant obesity. The authors underline that the morphological changes in the heart are more pronounced in subjects with obesity and tophi. The authors discuss the

significance of the higher uric acid levels and the chronic inflammation for the development of complications. The serum levels of IL-1 $\beta$  and IL-18 are not a representative marker for the disease severity and the cardio-vascular risk in the studied patients with gout. The authors find no significant differences in the levels of oxidative stress, regardless of the stage of gout, no association between the reactive oxygen species, nitrogen species and ascorbate species and the atherosclerotic vascular changes in renal and carotid arteries is found, and the authors show that the levels of inflammation are higher in the presence of tophi. In 56 gout patients the authors find no association between the ultrasound-detected monosodium urate crystals in the joints and the atherosclerotic changes in the common carotid arteries, the myocardium pump function and the renal blood flow.

A group of authors, including Assoc. Prof. Kundurdjiev, have investigated the uric acid metabolism and the pathophysiological mechanisms leading to the development of cardiac, renal and vascular changes in hyperuricemia, the types of renal changes in hyperuricemia, and the cardio-vascular effects of uric-acid-lowering medications. In the form of a review, the authors present the interrelation between the increased uric acid levels, the cerebro-vascular incidents and Parkinson's disease.

It is a well-known fact that the patients with type 2 diabetes are at increased risk for cardio-vascular complications. In a review, Assoc. Prof. Kundurdjiev presents the importance of ultrasound investigation as a non-invasive, fast and easy-to-use method for direct visualization of the myocardial and vascular changes in patients with type 2 diabetes. He underlines that transthoracic echocardiography and tissue-Doppler ultrasound could aid the detection of early signs of myocardial structural and functional damage, and the measurement of intima-media thickness, renal and carotid resistive index could be useful for the detection of systemic atherosclerosis. The author concludes that these diagnostic techniques could detect symptoms of cardio-vascular disease in asymptomatic patients with diabetes.

In 57 patients with type 2 diabetes a group of investigators, including Assoc. Prof. Kundurdjiev, confirm the data in the literature that the resistive index (RI) could be an indicator for the severity of renal damage in patients with type 2 diabetes. They have found a correlation between the RI and serum creatinine, glomerular filtration

rate and proteinuria, that represent markers for the extent of renal damage in patients with type 2 diabetes.

### ***3. Acromegalia and myocardial changes.***

A group of authors, including Assoc. Prof. Kundurdjiev, has studied the morphological and functional myocardial changes in patients with acromegaly. Assoc. Prof. Kundurdjiev has performed ultrasound examination of the heart in 146 patients with acromegaly and in a control group of 83 healthy volunteers and has found that the most prevalent morphological change in the heart in this disease is the cardiomegaly. The most prevalent functional impairment is the presence of diastolic dysfunction, most probably as a direct consequence of the left-ventricular concentric hypertrophy. It depends on the age of the individual and on the duration of the disease. The authors describe different changes in systolic function and conclude that the early diagnosis of acromegaly, the timely treatment of the complications (arterial hypertension, hyperinsulinism) could probably prevent the development of subsequent cardio-vascular changes and could decrease mortality.

### ***4. Serum uromodulin – a marker for the diagnosis of chronic renal disease.***

In a review and in an original article a research group lead by Assoc. Prof. Kundurdjiev evaluates the role of urine and serum uromodulin in chronic renal disease and concludes that the determination of its levels in both serum and urine allows early detection of renal damage and timely initiation of adequate treatment. In a study on 68 patients the authors have found that the levels of serum uromodulin significantly correlate with serum creatinine, urea, uric acid, cystatin C and resistive index. The results are a validation.

### ***5. Other fields of scientific interest.***

Research groups that include Assoc. Prof. Kundurdjiev describe clinical cases of two patients with monoclonal gammopathy, crescenting glomerulonephritis and amyloidosis, a female patient with renal scleroderma crisis, a female patient with hemochromatosis and three female patients with thalassemia minor and accompanying renal changes. The authors conclude that the presence of monoclonal

gammopathy requires dynamic follow-up due to the risk of malignant transformation and involvement of other organs and systems. The authors present renal ultrasound changes in patients with thalassemia minor and hemochromatosis as a result of iron storage. The authors describe a patient with sclerosing mesenteritis, and the difficulties in the diagnosis amyloidosis in two clinical cases, a patient with systemic lupus that presented with Guillain-Barre syndrome, lupus nephritis in males, a patient with aspergillosis and renal involvement, a patient with membranous glomerulonephritis as a manifestation of chronic graft-versus-host disease after allogenic bone marrow transplantation from unrelated donor.

In the form of reviews are considered different changes in calcium-phosphate metabolism in chronic renal disease, Blue toe syndrome, including historical overview, diagnostic and therapeutic modalities, the development of Blue toe syndrome as a complication of vascular interventions and especially in vasculitis, two severe complications of chronic renal disease – Sagliker syndrome and depression, with an accent upon the importance of the early and adequate treatment of metabolic disturbances, especially in dialysis population, in order to prevent the development of these severe complications of chronic renal failure.

In a review a group of authors, including Assoc. Prof. Kundurdjiev, presents the administration of different anticoagulants in patients with chronic renal failure, and the risks for adverse effects. The authors emphasize on the data that the increased exposition to warfarin is associated with increased risk for renal functional derangement. In patients with diabetes mellitus, the reduction in renal function is less with dabigatran, rivaroxaban and apixaban compared with warfarin, that could be explained not only with the different mechanisms of action, but also with the different renal clearance and half-life of the medications.

A series of 12 patients with subacute thyroiditis is described with a comprehensive review of the diagnostic and differential diagnostic approaches and the treatment of this disease.

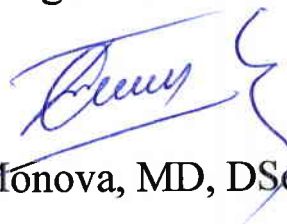
### **Conclusion**

Based on the presented documentation for the occupation for the academic Position “Professor” of Nephrology for the needs of the



Faculty of Medicine, Medical University – Varna, I think that Assoc. Prof. Dr. Atanas Kundurdjiev complies with the requirements of the Act on the Development of Academic Staff in the Republic of Bulgaria and the Regulation for its Implementation of the Academic Position “Professor”.

I would like to recommend to the Members of the Scientific Jury to propose to the Faculty Council at the Faculty of Medicine, Medical University – Varna, to elect Assoc. Prof. Dr. Atanas Kundurdjiev, MD, PhD for a Professor in the Scientific Specialty “Nephrology”, Professional field 7.1. Medicine, Higher Education 7. Healthcare and Sports.



22.06.2020

Prof. Dr. Daniela Monova, MD, DSc