Review

by Prof. Dr. Plamen Ivanov Penchev, PhD.

Regarding the announcement in the State Gazette, issue 7, dated January 23, 2024, for a competition for a professorship in the field of higher education 7. Healthcare and Sports Professional Direction 7.1. Medicine, and the scientific specialty Gastroenterology, at the Faculty of Medicine (Medicine, Dental Medicine, Pharmacy, Public Health, Medical College), Department of Anatomy and Cell Biology, Gastroenterology Clinic at University Hospital "St. Marina" EAD.

By order No. P-109-93 / March 21, 2024, of the Rector of MU "Prof. Dr. Paraskev Stoyanov" Varna, I have been appointed as a member of the Scientific Jury and accordingly, at the first meeting of the scientific jury, I was chosen to prepare a review on the procedure for filling an academic position "Professor" - 0.5 full-time position for the Department of Anatomy and Cell Biology and 1 full-time position for the Gastroenterology Clinic at University Hospital "St. Marina" EAD with candidate Assoc. Prof. Dr. Antoniya Yordanova Atanassova, D.M.

1. Qualifications:

Associate Professor Dr. Antonia Atanassova completed her secondary education at the IV Language High School with French Language Teaching "Frederic Joliot-Curie" in Varna and her higher education at the Medical University - Varna with excellent success. Her professional career began in 1986 as a medical internist in an internal medicine department at POCB-Shumen and has continued since 1987 at the University Hospital "St. Marina," Medical University Varna, Clinic of Gastroenterology. She has progressed through all stages from an assistant - senior chief assistant in the Clinic of Gastroenterology and the Department of "Internal Medicine" and reached the position of associate professor in the Department of Anatomy and Cell Biology and the Department of Internal Medicine at the Medical University - Varna, a position she has held since December 17, 2015, to the present. Throughout this period, Dr. Atanasova has acquired considerable professional, teaching, and scientific-research qualifications: she has augmented her standard clinical specialties in "Internal Medicine" and "Gastroenterology" with professional qualifications in highly specialized activities - diagnostic and therapeutic endoscopy in gastroenterology - to the second level, conventional ultrasound in gastroenterology and superficial structures, Doppler ultrasound in gastroenterology - second level, interventional and endoscopic ultrasound in gastroenterology - maximum third level. She has also enhanced her language education in English, completed the Faculty of Social Professions at the Medical University Varna, TEMPUS-PHARE/JEP09839-95 program "Restructuring of Medical Education" in France, University of Franche-Comte-Besancon, Clinic of Hepatology and Clinic of Gastroenterology at the University Hospital Jean-Minjoz under Prof. Jean-Philippe Mige in 1998. She has attended

numerous (over 25) national, regional, and European educational events to enhance her qualifications in various aspects of her medical, teaching, and research activities. In 2014, Dr. Atanasova obtained the title "Doctor" in the scientific specialty of "Gastroenterology" after successfully defending a dissertation on the topic "Clinical assessment of patients with ulcerative colitis - a contemporary approach," and in 2021, Assoc. Prof. Atanasova obtained the scientific degree "Doctor of Sciences" after successfully defending a dissertation on "Serum expression of micro ribonucleic acids in patients with chronic inflammatory bowel diseases." The facts listed in the creative autobiography define Assoc. Prof. Dr. Antonia Atanasova is an exceptionally prepared physician who is deeply educated and without compromises in all aspects of her teaching and scientific research activities.

1. **Evaluation of Scientific Research Activity:**

Assoc. Prof. Atanassova has presented 1 Monograph with a volume of 223 pages, participated in 3 textbooks with a total volume of 14 pages, Publications: 201. with a total volume of 1500 pages, 167 times participated in scientific forums, including 71 reports presentations with a total volume of 300 pages.

In Section G of the academic record, Assoc. Prof. Atanasova has presented 91 publications and presentations, of which 14 are published in scientific journals, referenced and indexed in globally renowned databases with scientific information. Of the remaining 60, they were published in non-peer-reviewed journals or published in edited collective volumes, including ten presented for obtaining a doctoral degree. Assoc. Prof. Atanasova has additionally presented 16 full-text publications in scientific journals and collections, exceeding the minimum bibliometric requirements for the position of Professor.

According to the requirements of the Law on the Development of Academic Staff and its implementing regulations, Assoc. Prof. Dr. Antonia Atanasova participated in the competition and had ten equivalent publications in a habilitation thesis. These are the full-text scientific publications listed in Section B4 of the academic record, published in editions cited in the indexed and indexed in the world database with scientific information - Web of Science and Scopus. These publications carry 336.5 bibliometric points, with a minimum requirement of 100. In 60% of these publications, Assoc. Prof. Atanasova is the first author. In 40%, she is the sole author. In the remaining 40%, she is the second author (No. 8), third author (No. 2), and sequential author (No. 1,7). Three (30%) of the provided publications have Impact Factor (IF): with a total IF = 7.7 and were published in the past four years after obtaining the PhD degree and assuming the academic position of Associate Professor. In publications with IF, candidate Assoc. Prof. Atanasova is the first author (No. 9, from 2022), second author (No. 8, from 2022), and third author (No. 2, from 2020). These facts convincingly reveal Assoc. Prof. Atanasova's personal participation in the presented publications, as well as her lasting interests in certain areas of publishing activity. Eighty percent of the presented publications contain original developments, results achieved in teamwork, and only 20% (2 articles) are devoted to literature review, and one article contains own results as clinical cases with

observation and literature review (No. 7). The publications can be distributed in several main directions for study: Chronic liver diseases (B4.1,7,10); Inflammatory bowel diseases (B4.2,3,4,5,6,9); Preventable infectious diseases during biological treatment (B4.8).

Contributions: The publications can be interpreted as having a practical-applied character (V4.1,2,3,4,5,6,7,8,9,10). Some have original character and present innovative approaches in a given field (V4.2,3,4,5,6,9), while others can be seen as publications with theoretical contributions containing original results published for the first time in Bulgaria (V4.3,4,5,6,8,9). The presented publications in this section are equivalent to a habilitation work, revealing the diversity of scientific areas in which Assoc. Prof. Atanasova works and publishes, defining the lasting interests and subsequent research in the respective domains: obesity and non-alcoholic fatty liver disease (V4.1). This publication represents a literature review with a theoretical-practical contribution. A comprehensive analysis of the main characteristics of non-alcoholic fatty liver disease (NAFLD) in childhood, frequency, risk factors, clinical symptoms, and comorbidity with exceptionally high social significance, such as insulin resistance, arterial hypertension, type 2 diabetes mellitus, dyslipidemia, has been conducted. Among the promising biomarkers, CK-18 is considered an innovative, non-invasive biomarker for detecting non-alcoholic steatohepatitis. Algorithms for the diagnosis of NAFLD and NASH, as well as the main directions for the treatment of the disease, 1/reducing steatosis, and 2/reducing inflammation, are discussed. The article serves as a starting point for later clinical studies related to this socially significant disease, which negatively affects a number of other conditions. In search of new forms of treatment beyond established therapies, whose long-term effectiveness faces several difficulties, Assoc. Prof. Atanasova continues to analyze the literature sources from accessible databases such as Scopus, ScienceDirect, Web of Science, PubMed, UpToDate for contemporary treatment of metabolic syndrome (V4.10). Scientific evidence suggests that regulating gut microbiota with probiotics, prebiotics, and biogenics may be an effective therapeutic strategy for the prevention and treatment of non-alcoholic fatty liver disease, a condition associated with metabolic syndrome. The publication has a theoretical-applied character and provides an original approach to the silent epidemic of obesity, insulin resistance, and metabolically induced fatty liver disease. Inflammatory bowel diseases (IBD) have been an area of lasting scientific interest over the years: all aspects from disease detection to monitoring (V4.2,3,4,5) and prognosis of IBD (V4.6,9) are subjects of research. The main contributions of this group of studies are introducing a contemporary, elegant, innovative approach through micro ribonucleic acids (miRNAs) in the diagnosis, monitoring, and personalized treatment of IBD (V4.3,4,5,6,9), applied for the first time in Bulgaria. These publications have original theoretical, practical, and applied contributions. For the first time in Bulgaria, the detailed and exhaustive application of a panel of miRNAs in adult patients with IBD is reflected. A reliable, accurate, and detailed description of the expression of individual miRNAs in patients with IBD in remission stage is provided. The expression of miRNAs according to the characteristics of patients with IBD and the treatment received is comprehensively reflected. Threshold values for distinguishing miRNA expression are determined. A specific patient profile with CD and UC is established based on miRNA expression. Specific miRNAs for remission and activity, localization, course form, and treatment are identified. A link is

established between contemporary achievements in molecular biology and clinical practice in search of effective, non-invasive, and personalized forms of tracking a group of immune-mediated diseases - IBD. Publication V4.2 has an original contribution but also practical-applied value as it proposes adenosine deaminase (ADA) as a new non-invasive biomarker in the arsenal of methods for monitoring patients with IBD. The ROC curve analysis reveals a good ability of ADA to distinguish not only patients with IBD from healthy individuals but also patients with active disease and those in remission. ADA levels are significantly elevated in patients with IBD. Together with FC and CRP, ADA can be used as an effective biomarker for assessing intestinal inflammation and as a potential indicator of disease activity.

Patients with inflammatory bowel diseases (IBD) receiving modern treatment with anti-tumor necrosis factor-alpha (anti-TNF-alpha) antibodies are of particular interest and require systematic monitoring by medical specialists. For the first time in Bulgaria, data from a reference center for the diagnosis, monitoring, and treatment of IBD have been presented and summarized regarding the frequency of latent and active tuberculosis in patients before and during biological treatment with anti-TNF-alpha antibodies (V4.8). This publication has both theoretical and practical-applied contributions. The results are compared with data from similar European studies since there are no available publications on similar studies in other reference centers in Bulgaria. A publication presenting two cases from the clinical practice of focal and multifocal infantile hepatic hemangioma in infants with an analysis of the literature on the types of infantile hepatic hemangiomas, their frequency, etiopathogenesis, clinical presentation, diagnosis, treatment, and prognosis has also been provided (V4.7). This publication has a pronounced practical-applied character and reveals the wealth of clinical knowledge and practical experience that can serve for training in the field of ultrasound diagnostics for young doctors and application in the clinical practice of pediatricians, gastroenterologists, and pediatric gastroenterologists.

The literature sources for these ten equivalent publications amount to a total of 341, as follows for each of the articles: V4.1-29; V4.2-34; V4.3-23; V4.4-27; V4.5-27; V4.6-83; V4.7-21; V4.8-36; V4.9-20 and V4.10-41. All scientific works discussed so far have been published in the period after holding the academic position of "Associate Professor" since 2015.

Although the law does not require it, in Section A of the academic report, Assoc. Prof. Atanasova presented her doctoral dissertation to obtain a PhD, and in Section B, she presented her doctoral dissertation to obtain the scientific degree "Doctor of Sciences." Even though this is not necessary for participation in the competition for the academic position of "Professor" (in this case, there are ten equivalent to habilitation work publications from Section V), I find that presenting the dissertations is correct, as they shape the overall perception of development as a specialist, teacher, and scientist. I have reviewed and presented the review of the candidate dissertation on the topic "Clinical Evaluation of Patients with Ulcerative Colitis - a Modern Approach." The doctoral dissertation on "Serum Expression of Micro Ribonucleic Acids in Patients with Chronic Inflammatory Bowel Diseases" has been discussed and defended in the respective academic procedure. As an academic staff member working in the same field, I can state in one sentence the exceptional scientific value of this work, which is pioneering for Bulgaria. Assoc. Prof. Antonia

Atanassova has 43 citations of 11 published documents, h-index 3 in the world bibliographic database Scopus.

Since holding the academic position of "Associate Professor," Assoc. Prof. Atanasova has been the leader of two research projects funded by the Science Fund at MU-Varna: the project "Metabolic Syndrome in Patients with Inflammatory Bowel Diseases," completed and certified on 01.23 and project No. 23002, which won funding from the Science Fund - MU-Varna: "Study of Modern Biomarkers in Non-Alcoholic Fatty Liver Disease" / FN-13/09.01.24; participates as a researcher in the project "Etiology, Clinical Presentation, and Diagnosis of Non-Alcoholic Fatty Liver Disease in Children and Adolescents" 21.12.2020 - 21.12.2022, and the international research project Interreg Danube Transnational Programme CD SKILLS – 2019-2022 - funded by the European Union.

Assoc. Prof. Antonia Atanasova has participated in over 167 scientific forums in Bulgaria and abroad. Assoc. Prof. Atanasova is a member of the scientific jury for obtaining a PhD with four reviews and two opinions and a scientific jury for obtaining the academic position of "Associate Professor."

2. Assessment of teaching activity:

Assoc. Prof. Atanasova has over 37 years of teaching experience at the Medical University - Varna in the Department of Internal Medicine and Anatomy and Cell Biology. From her creative autobiography, it is evident that during her academic career from assistant to associate professor, she has continuously enhanced her knowledge and teaching skills through participation in various forms of postgraduate education, such as intensive courses and workshops both domestically and abroad (France, Denmark, Czech Republic, Greece).

Assoc. Prof. Atanasova delivers lectures on various topics concerning socially significant issues in gastroenterology, the application of various medications in practice, clinical cases, etc., within Continuing Medical Education (CME) programs to general practitioners, gastroenterologists in outpatient care, and gastroenterologists from different regions in Bulgaria, specializing in pulmonology, at national and regional meetings, conferences, symposiums, academies, and schools.

She gives lectures on the Propaedeutics of Internal Medicine to students of the Faculty of Medicine, 3rd year, lectures on Internal Medicine to 5th-year students, Faculty of Medicine Second Department of Internal Medicine; Lectures on Anatomy and Cell Biology (splanchnology section) to 1st-year students of Medicine, lectures on Anatomy (full course) to students of the Medical University of Varna - Medical Inspectors of Public Health; exercises in Gastroenterology for 5th-year students, Faculty of Medicine; practical exercises - SIP Course in Abdominal Ultrasonography, 5th-year students, Faculty of Medicine; seminar sessions with gastroenterology trainees, seminar sessions with intern doctors, 6th year; practical exercises with gastroenterology trainees in the field of "Abdominal Ultrasonography", practical exercises with gastroenterology trainees in the field of "Fibroesophagogastroduodenoscopy", practical exercises with gastroenterology trainees in the field of "Fibrocolonoscopy", practical exercises with gastroenterology trainees in the field of "Interventional Procedures under Ultrasound Control", practical exercises with

gastroenterology trainees in the field of "Contrast-Enhanced Ultrasound and its Application in Focal Lesions"; Exercises in Histology with 1st-year students at the Department of Anatomy and Cell Biology, Medicine and Dental Medicine, exercises in splanchnology - macroscopic and microscopic part at the Department of Anatomy and Cell Biology, Dental Medicine. She participates in examination boards for a semester and state exams in internal medicine for students and state exams in the specialty of "gastroenterology."

Assoc. Prof. Atanasova supervises two successfully defended doctoral candidates and one enrolled in a doctoral program in "Internal Medicine." She is a co-author of three students. The monograph she presents is written in a didactic style itself has educational value and is used as a teaching aid.

The provided report shows that Dr. Atanasova's teaching workload exceeds the normative requirements of the Medical University of Varna.

3. Assessment of Diagnostic and Therapeutic Activity:

Assoc. Prof. Dr. Atanasova has over 37 years of work experience as a physician, with 28 years in the recognized gastroenterology specialty. She has worked as a resident physician in an internal medicine department in Shumen and as an assistant professor - chief assistant professor in the gastroenterology clinic at the Medical University of Varna. She is proficient in conventional upper and lower endoscopy and echography, Doppler echography in gastroenterology, and endoscopic echography. She holds certificates up to level II in gastrointestinal endoscopy and level III for interventional procedures under ultrasound control. Dr. Atanasova's main clinical activity coincides with her scientific interests, which include diagnosing and treating chronic inflammatory bowel diseases. In this area, her level of competence reaches the maximum expert level - Dr. Atanasova is a familiar name and a known and respected specialist in the IBD (Inflammatory Bowel Disease) guild. She is among the creators of a multidisciplinary team of specialists dealing with IBD at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna.

The two defended dissertations are also in the field of inflammatory bowel diseases. The work and research she has done in connection with the dissertations are related to a high level of clinical competence and profound knowledge and experience in the fields of genetics, cell biology, immunology, and histomorphology in inflammatory processes.

In conclusion, based on the analysis of the presented data, I find that Associate Professor Dr. Antonia Yordanova Atanasova, MD, not only meets but repeatedly exceeds the criteria of the Law on the Development of Academic Staff in Bulgaria and the normative requirements of the Medical University "Prof. Paraskev Stoyanov" - Varna for the position of "Professor" in the specialty of gastroenterology. Without hesitation, I will vote "Yes" at the final meeting of the Scientific Jury.

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12. May. 2024

Prof. D-r P. Penchev, PhD