

**To the members of the scientific jury
Defined by Order No. P-109-142/ 23.02.2023
of the Rector of MU-Varna**

R E V I E W

**Of Prof. Dr. Iva Stefanova Christova, MD, Ph.D., D.Sc.
National Center of Infectious and Parasitic Diseases**

Competition

**Academic position "ASSOCIATED PROFESSOR"
Area 4.3. Natural sciences, mathematics and informatics
Specialty "Virology"**

**For the needs of Department "Microbiology and virology"
Faculty of Medicine, Medical University – Varna
and Laboratory of Virology, UMBAL "Sveta Marina EAD"-Varna**

announced in State Newspaper No. 102/ 23.12.2022

with a single candidate

ZHIVKA DEMIREVA STOYKOVA-KALCHEVA, MD, PhD

I declare that have no conflict of interest and no joint publications with Dr. Stoykova.

CAREER DEVELOPMENT

Dr. Stoykova graduated in medicine in 2002. She has been working at the University of Medicine - Varna since 2007, initially as an assistant, and from 2019 until now as the chief assistant at Department of "Microbiology and Virology" and in UMBAL "St. Marina" EAD, Varna. She specialized in virology, and successfully completed a number of thematic courses on laboratory diagnostics of viral infections with an emphasis on their PCR diagnostics with a

certificate. In 2013, after successfully passing the exams, she acquired a specialty in virology. In 2018, she completed her doctoral thesis with defence of a dissertation on cytomegalovirus infection. She conducted targeted molecular-genetic and seroepidemiological studies on cytomegalovirus infections in risk groups.

SCIENTIFIC RESEARCH ACTIVITY

In the competition, Dr. Stoykova presents a dissertation for the scientific and educational degree "Doctor" and 65 scientific papers, distributed as follows:

- Publications in journals with an impact factor – 7
- Publications in magazines with SJR – 23
- Publications in other indexed editions – 6
- Publications in collections (national and international) - 1
- Scientific works presented at national and international scientific forums - 28

It should be noted that Dr. Stoykova is the first author of 5 of the publications and 9 of the papers presented at scientific forums. She is the first author of a prestigious publication in a high-impact journal, PLoS One, presenting an analysis on the significance of inconclusive SARS-CoV-2 Real time PCR results. With her participation, publications were realized in leading journals such as European Journal of Inflammation, Indian Journal of Hematology and Blood Transfusion, Biotechnology & Biotechnological Equipment, Acta Microbiologica Bulgarica, Folia Medica,

Dr. Stoykova's works have been evaluated as significant by the scientific community, as evidenced by their citations in authoritative scientific publications (a total of 61 times according to Goodle Scholar).

Dr. Stoykova is a participant in 4 research projects, 3 of which were highly rated and financed by the "Science" Fund of MU-Varna, and one was financed by the BLS under the Program for financing research projects of young doctors-specialists:

- Seroepidemiological and molecular genetic studies of cytomegalovirus infection in risk groups. Congenital cytomegalovirus infection.
- Seroepidemiological and laboratory-diagnostic studies on the prevalence and clinical significance of EBV infection.
- Study and analysis of HDV genotypes circulating in northeastern Bulgaria.

- Primary, post-erythremic, post-thrombocytopenic myelofibrosis - involvement of inflammatory cytokines (interleukin 6 (IL-6), interleukin 8 (IL-8)) and regulators of iron metabolism (hepcidin) in the pathogenesis of the anemic syndrome.

Summarized, all these facts convincingly prove that Dr. Stoykova is an active, theoretically and practically prepared scientist with a lot of knowledge and potentialities.

MAIN SCIENTIFIC DIRECTIONS

The main topics in Dr. Stoykova's research activities are herpes virus infections, chronic viral hepatitis and COVID-19.

Six main directions in her research activity could be outlined:

1. Studies on latent viral infections in patients with oncohematological diseases and in immunocompromised patients
2. Serological screening for the prevalence of some herpesvirus infections in the general population and in different risk groups thereof
3. Laboratory diagnostic possibilities for some herpes virus infections to help clinical practice and interpretation
4. Acute and chronic viral hepatitis
5. Aspects of SARS-CoV-2 infection
6. Clinical manifestations when HIV infection is established

MAJOR SCIENTIFIC CONTRIBUTIONS

The need to introduce RT-PCR into routine practice as the method of choice for detecting reactivation of latent viral infections (CMV, EBV, BKV) in patients under immunosuppression due to the underlying disease, after transplantation of solid organs and hematopoietic stem cells, has been confirmed. The importance of additional serological diagnostic tests such as anti-EA-(D) IgM and anti-EA-(D) IgG in different groups of immunocompromised patients was analyzed.

Large-scale sero-epidemiological studies have been carried out on the spread of CMV and EBV infection among the population in North-eastern Bulgaria for a long period, both for the general population and for different risk groups from it - women of reproductive age, pregnant women and new-born children. The estimated population risk of intrauterine transmission of CMV was established at 7% in total for the Varna region. The influence of age and gender on the onset of primary EBV infection was determined. Current seroprevalence of these two chronic viral infections is characterized in detail and dynamics compared to previous studies are analysed.

The importance of basic serological tests in determining infection with herpes viruses has been confirmed, but the possibilities of various additional laboratory methods such as avidity tests, immunoblot and RT-PCR tests to aid diagnosis, as well as to determine the statute of limitations have been analyzed and evaluated. the infection. Originally for the country, the use of non-invasive clinical material, saliva, in PCR analysis in a symptomatic newborn with suspected CMV infection was applied, the result of which enables the timely initiation of specific treatment.

A thorough analysis of hepatitis B in patients with liver dysfunction was performed. Post-vaccination immunity against HBV in a large cohort of healthcare workers was studied. Virological responses during antiviral therapy of patients with chronic HBV/HDV hepatitis were assessed. A higher frequency of HBsAg and anti-HCV positivity was found in patients with non-Hodgkin's lymphomas than the average for the region and the country, which may be a significant risk factor for the development of these diseases. The dominant variant in the epidemiological pattern of HCV genotypes, namely genotype 1b, was found in patients with chronic liver diseases in North-eastern Bulgaria.

Dynamics of COVID-19 in a large-scale hospital-based study for the first two years of the pandemic was analysed. A detailed analysis of the options for dealing with suspicious COVID-19 PCR results was performed.

A study of the most common symptoms leading to the need for diagnostic clarification of HIV seropositivity was made, as well as an analysis of the most common co-infections in patients living with HIV.

TEACHING ACTIVITY

Even as an assistant and currently as a chief assistant, Dr. Stoycheva actively participates in conducting exercises for students from the Faculties of Medicine, Dentistry and Pharmacy. She leads exercises in Bulgarian and in English for foreign language students. In the last 5 years, after acquiring the educational and scientific degree "Doctor of Medicine", she also leads part of the lecture course on virology for medical students.

CONCLUSION


Dr. Zivka Stoykova is an established scientist, a respected professional, highly regarded by the scientific community at home and abroad. The scientific contributions of her works give her a worthy place among the leading researchers of viral infections in Bulgaria.

Summarizing the results of her research activities, the scientific contributions of her multifaceted scientific developments, highly appreciated by the scientific community, with a significant number of their citations; taking into account her teaching skills, I can confidently state that they fully satisfy the quantitative and qualitative criteria of the law (ZRASRB) for occupying the academic position "Docent", the Regulations for its application and the Regulations for the terms and conditions for acquiring scientific degrees and holding academic positions at MU-Varna.

Based on all this, I recommend the respected members of the scientific jury to support the candidacy and to propose to the Faculty/Academic Council of MU-Varna chief assistant Zhivka Stoykova Demireva-Kalcheva, MD, PhD to be elected to the academic position of "ASSOCIATE PROFESSOR" in the specialty "VIROLOGY", for the needs of the Department of Microbiology and Virology. Faculty of Medicine, MU-Varna and of the Laboratory of Virology, UMBAL "St. Marina EAD"-Varna.

Sofia city
28.04.2023

Signature:


/ Prof. Iva Christova, MD, PhD, DSc/

