

# **R E V I E W**

**From Prof. dr. Vanya Nedkova Kolarova, MD  
Head of Department of Pediatrics,  
Medical University – Pleven**

**About: Procedure for the occupation of the academic position "Associate Professor" in the academic staff of UMBALSM “N I Pirogov” EAD, , in accordance with protocol SC 0719/12.06.2019 of the meeting of the Scientific Council, with participant: Dr. Iren Stoyanova Tzotcheva**

## **Dr. Iren Stoyanova Tzotcheva**

Dr. Tzotcheva graduates Medicine in 1997 and works as resident physician in Polyclinic in Sofia until 2001.

From 2001 to 2005 she is a full-time PhD student and a specialist in the Department of Pediatrics, Base I, Children's Clinic, Hospital "Alexandrovska" MU-Sofia. She works consistently in the same clinic as a doctor, assistant, chief assistant until 2018.

From 2018 until now she holds the position of Head of Pediatrics Department at UMBALSM “N.I. Pirogov” EAD.

In 2006 she obtained the educational and scientific degree "Doctor" after successfully defending her dissertation on the topic "Clinical, immunological and genetic features of bronchial asthma in childhood".

Dr. Iren Tzotcheva became a specialist in Pediatric Diseases in 2006, Diplom № 011149, AS. In 2013 she became a specialist in Pediatric Pulmonology, Diplom № 017725, AS.

Since 2018 she holds a Master's Degree in Public Health and Health Management, MU-Sofia.

Dr. Iren Tzotcheva's qualifications include conventional fibrobronchoscopy, spirometry, flow cytometry, immunological diagnosis.

Dr. Iren Tzotcheva also held specializations in pulmonary diseases in pediatrics in Paris-France, Dubrovnik-Croatia, Bilbao-Spain. She was a graduate student at the German Academy for Scientific Exchange at the Children's Clinic in Munich, Germany and has developed research projects in the field of genetics

of bronchial asthma by genotyping polymorphisms of Interleukin-4 and CD genes.

Her participation in scientific projects is expressed in co-investigator on the topic at the Medical University-Sofia "The importance of serum biomarkers in assessing the severity of inflammation and the effect of antibiotic therapy in children with community acquired pneumonia". The project received high valuation.

Research contract 2018-2019 on the theme: "Dynamic picture of respiratory pneumococcal infections in children after the introduction of routine pneumococcal vaccination in Bulgaria".

She is principal investigator on a project on the topic: "Nasopharyngeal microbiome in children with chronic pulmonary diseases" - highly valued.

She is currently a co-researcher in a scientific project on the topic: "Viral pathogens in respiratory medicine - distribution in Bulgaria, genetic and clinical characteristics".

Dr. Iren Tzotcheva annually participates in national and international congresses and conferences with scientific reports and posters.

She is fluent in English and German languages and computer programs.

She is a member of European Society for Pediatric Infectious Diseases (ESPID), European Respiratory Society (ERS), Bulgarian Pediatric Association, Bulgarian Society for Pulmonary Diseases, Bulgarian Association for Pediatric Pulmonology, Bulgarian Medical Association.

### **Educational activity:**

According to the academic report in the academic year 2017-2018, the teaching load of chief assistant dr. Iren Stoyanova Tzotcheva is 360 academic hours, which include teaching medical students 5-degree, in Bulgarian and English, participation in exams, training of trainee doctors, teaching of students - dental medicine.

### **Research activity:**

Dr. Iren Tzotcheva's research includes the following areas:

1. Viral and respiratory infections in infancy;
2. Community acquired pneumonia;
3. Rare diseases with pulmonary involvement;
4. Immunology, genetics and diagnosis of bronchial asthma.

## **1. Viral respiratory infections:**

The most common virus is the respiratory syncytial virus, which is a major pathogen in bronchiolitis and pneumonia. The author examines the virus during the autumn-winter season, in a multi-year analysis, thereby conducting the first study to identify the genotype of circulating strains in Bulgaria.

Dr. Iren Tzotcheva has conducted a study on influenza viruses and demonstrates the dominance of virus-A (H1N1). The results confirm the genetic plasticity of seasonal influenza viruses and demonstrate the search for new genetic variants of clinical relevance.

The author also examined influenza-B virus, proving that it is most common in children aged 4 to 14 years.

Dr. Tzotcheva examined the viral spectrum of acute respiratory infections, proving that the most common is the respiratory syncytial virus in 56%. The next most common are rhinoviruses, metapneumoviruses. This study demonstrated the high incidence of co-infection with 2 or 3 viruses in children with bronchiolitis and pneumonia.

## **2. Community acquired pneumonia:**

The author conducted a study of serum biomarkers for the monitoring and diagnosis of pneumonia. The highly specific C-reactive protein, Procalcitonin, and Trigger Receptor on Myeloid Cells were investigated. Statistically significant correlations were found with the severity and risk of complications. It has been proven that outpatient antibiotic therapy must be considered when evaluating C-reactive protein and Procalcitonin levels.

Studies on *Mycoplasma pneumonia* have been conducted, that examined in details the clinical, laboratory and X-ray data of patients. The developed algorithm shows high success rate and emphasized heterogeneity of the disease.

The etiological spectrum of pneumonia was analyzed and *Streptococcus pneumoniae* was found to be the most common isolate in 66% of children receiving the 10-valent pneumococcal vaccine.

Of practical importance is the detection of a viral pathogen in 16.2%.

The analysis of the radiographic findings revealed a significant divergence of interpretation in children.

Three of dr. Tzotcheva's scientific publications are related to the treatment of pneumonia.

### **3. Rare diseases with pulmonary involvement:**

The author described several difficult-to-diagnose cases, concluding that early-onset aggressive pathogenic treatment led to complete recovery of the lung.

In this section, the author describes difficult-to-diagnose cases, such as congenital diaphragmatic hernia, discovered at age 6; Bruton's disease - described in 5 patients with severe life-threatening infections and cylindrical bronchiectasis.

Two of the publications are related to congenital cystic adenomatous malformation CCAM.

The author also described nocardiosis as a serious disease affecting immunocompromised patients.

### **4. Immunology, genetics and diagnosis of bronchial asthma:**

The author's contribution is a thorough analysis of interleukin-4 and CD-14 genetic polymorphisms in the pediatric population. The methods that have been developed and optimized for genotyping these polymorphisms are with high analytical reliability. Interleukin-4 C-589T, C-33T polymorphisms have been found to be important for the development of bronchial asthma.

Polymorphisms affect the genetic control of IgG synthesis. She found that the values of total serum immunoglobulin-E in atopic children were dependent on the type of polymorphisms.

The role of interleukin-5 and 4 in the pathogenesis of bronchial asthma and allergic diseases and those of interleukin-8 for infectious diseases has been confirmed.

Total Immunoglobulin E values have been found to provide additional information on the severity of obstruction in childhood bronchial asthma.

The total volume of scientific production of dr. Iren Tzotcheva includes:

total number of publications - 44; of which 35 publications in Bulgarian Journals; 8-publications in Foreign Journals; 1-participation in scientific volume; 6 publications have Impact Factor.

The author has 8-citations in Bulgaria, 200-citations in Scopus.

Scientific publications with a total Impact Factor are 17,996, of which a personal Impact Factor is 2.008.

According to the information provided by the author about the minimum national requirements for the competition, the results exceed the minimum required, especially in the part of scientific publications in refereed journals.

Content	Required for Ass Prof	Available
Index A	50	50
Index B (scientific publications)	100	100
Index G (publications in refereed journals)	750	823
First author	10	47
Publications with Impact Factor	5	6

Dr. Iren Tzotcheva is a pediatrician with many years of clinical experience in pediatric pulmonology who has introduced new diagnostic and therapeutic approaches in children with pulmonary diseases.

The research activity meets and exceeds the criteria for the academic position of “Associate Professor”.

In conclusion, I believe that dr. Iren Stoyanova Tzotcheva, participating in the announced procedure for the occupation of academic position "Associate Professor", in the academic staff of UMBALSM "N.I. Pirogov" EAD, in accordance with Protocol SC 0719 / 12.06.2019 from the Meeting of the Scientific Board meets the requirements for the occupied position.

That is why I recommend the Honorable Scientific Jury to vote positively for the position of Associate Professor of dr. Iren Tzotcheva, MD.

Reviewer: Prof. V.Nedkova, MD .....