STATEMENT

by Assoc. Prof. Dr. Ina Evgenieva Geneva, MD

Department of Pediatrics and Medical Genetics, Medical University of Plovdiv

for the award of an educational and scientific degree "DOCTOR"

Academic field of higher education: 7. Health Care and Sports

Professional direction: 7.1. Medicine

Academic specialty: 03.01.50 Pediatrics

Form of doctoral studies: part-time, self-funded, external to the Medical University

Author: Dr. Boris Petrov Angelov

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Doctoral student at the Department of Pediatrics and Medical Genetics "Prof. Ivan Andreev," Medical University, Faculty of Medicine – Plovdiv

Topic: "Therapeutic Possibilities in Acute Bronchiolitis for Children Up to Two Years of Age"

Academic Advisors: Prof. Dr. Miroslava Nikolova Bosheva, MD and Assoc. Prof. Dr. Delyan Penev Delev, MD

General Presentation of the Procedure and the Doctoral Candidate

The presented set of materials in electronic format is in accordance with Article 70(1) of Part I, "Acquisition of the Educational and Scientific Degree of DOCTOR" and the scientific degree of "DOCTOR OF SCIENCES" at the Medical University of Plovdiv; Regulation of the Medical University of Plovdiv dated January 28, 2021, and includes the following documents:

- A letter to the Rector of the Medical University of Plovdiv requesting the initiation of the dissertation defense procedure.
- Curriculum vitae in European format with the doctoral candidate's signature.
- Notarized copy of the diploma for higher education.
- Orders related to enrollment in the doctoral program, interruptions in education (due to maternity), and resumption of education, as well as orders for dismissal with the right to defend.
- Orders for conducting an examination from the individual study plan and the corresponding protocol for passing the examination or doctoral minimum in the specialty.
- Protocol from the departmental council meeting for the preliminary discussion of the dissertation and decisions made regarding the initiation of the procedure and the composition of the scientific jury.
- The doctoral dissertation.

- An abstract.
- A list of scientific publications on the subject of the dissertation.
- Copies of the scientific publications.
- A list of participation in scientific forums.
- A declaration of the authenticity and accuracy of the attached documents.

The doctoral candidate has submitted 4 publications.

Dr. Boris Angelov completed his medical degree at Medical University Varna in 1995. He worked as a physician for two years at the Central Medical and Diagnostic Center in Burgas and later at "MBAL-Burgas," specializing in emergency pediatric care. In 1997, he shifted his focus to pediatrics, initially as a medical resident at "MBAL-Burgas" Ltd., and subsequently as a pediatrician at the hospital's First Pediatric Department, where he has been the head since 2013. In 2020, he was selected through a competition to become an assistant in pediatrics at the Faculty of Public Health, Medical University "Prof. Dr. Assen Zlatarov" in Burgas. Dr. Angelov is a member of the Bulgarian Pediatric Society and the Bulgarian Doctors Society. He is proficient in English and Russian. Dr. Boris Angelov was admitted as a part-time doctoral candidate in the Department of Pediatrics and Medical Genetics at Medical University Plovdiv in 2022.

2. Relevance of the Topic:

Acute bronchiolitis is the most common lower respiratory tract infection in children under the age of 2. Its prevalence reaches up to 162 cases per 1,000 children, and the mortality associated with this occasionally life-threatening condition is around 2 million cases annually. Although the first description of acute bronchiolitis (AB) was published in 1941, a unified therapeutic strategy that can reduce mortality has not yet been widely accepted. Dr. Angelov's doctoral research offers an innovative study focused on children under the age of 2 with AB, emphasizing the clinical course, complications, and therapeutic possibilities to manage the disease. Furthermore, there is a lack of studies that differentiate between children under 2 years of age in separate age groups, specifically 0-6 months, 7-12 months, and 13-24 months. The proposed recommendations for effective and safe treatment of children with AB under 2 years of age, based on their monthly age, hold particular significance for clinical practice. The results of this research expand our understanding of this socially significant condition and the potential for personalized therapy in cases of acute bronchiolitis in children under 2 years of age.

3. Understanding of the Problem

The doctoral candidate formulates the objectives and goals of this work based on conclusions drawn from a comprehensive review of the literature on the subject. The literature review is extensive, encompassing 253 sources, including 9 in Bulgarian and 244 in Latin script. In-depth theoretical knowledge enables logical deductions to be made. The research's objectives stem from the identified unresolved issues and contradictory data found in the literature. This thorough literature review indicates that the doctoral candidate has a deep understanding of the problem and has used this knowledge to frame the goals and objectives of their research.

4. Research Methodology

The objectives are clearly and precisely formulated, executable, and completely aligned with the dissertation's topic. The chosen research methodology allows for the achievement of the set goal. Four well-defined tasks have been set to achieve the objective:

1. Analyze the socio-demographic characteristics, clinical profile of patients, and disease complications.

2. Analyze the results of the administered treatment for bronchiolitis in relation to age groups (0-3 months, 4-6 months, 7-12 months, 13-24 months), and derive a therapy that affects vital indicators in acute bronchiolitis in the 0-24 months age group, depending on their monthly age.

3. Analyze the effects of the administered medication treatment in relation to age groups (0-3 months, 4-6 months, 7-12 months, 13-24 months), with a focus on side effects.

4. Provide recommendations for therapeutic interventions in bronchiolitis for children of different ages.

The study conducted is prospective and observational in nature. The technical unit chosen is the First Pediatric Department of the UMHAT Burgas. The logical unit of observation is each child hospitalized with a diagnosis of first acute bronchiolitis between the ages of 0-24 months, without the exclusion criteria, in the First Pediatric Department of the UMHAT Burgas, for the period from June 2017 to December 2019. The study includes 90 patients divided into four age groups: 0-3 months, 4-6 months, 7-12 months, and 13-24 months. The effect of five therapeutic options was monitored:

- Inhalation with Ventolin.
- Inhalation with Ventolin and Methylprednisolone.
- Inhalation with Pulmicort.
- Combined inhalation with Ventolin and Pulmicort.
- Methylprednisolone.

To achieve the set objectives, standardized and modern clinical, functional, imaging, and statistical methods were utilized. The application of these methods has successfully addressed the research tasks outlined in the dissertation and has contributed to the attainment of the defined goal.

5. Characteristics and Evaluation of the Dissertation and Contributions

The dissertation is the individual work of the doctoral candidate. The results of the dissertation provide valuable recommendations for the diagnosis and treatment of acute bronchiolitis (AB). The application of imaging studies is based on an individual assessment by the treating physician, taking into account specific criteria, rather than applying a standard approach to all children with AB. Bacterial complications are found in only 1.2% of cases, mainly in children with comorbidities, and the use of antibiotic treatment should be refined.

The candidate did not find any available studies in the literature that provided recommendations for behavior based on the monthly age of children affected by AB under the age of 2. Published guidelines typically divide children broadly into those under 12 months or those under 24 months. This fact makes the dissertation particularly valuable for clinical practice because Dr. Angelov's results offer treatment recommendations based on the patient's age. The results indicate that the use of Budesonide is unnecessary in all age groups. There is no effect of using Ventolin in children under 6 months of age. For children aged 0 to 6 months, starting treatment with Methylprednisolone is recommended, while for children aged 7 months to 12 months, the addition of Ventolin inhalation may be considered if the effect is unsatisfactory. For children over 1 year of age, starting inhalation therapy with Ventolin is advisable, with the possibility of adding Methylprednisolone if the response is unsatisfactory. The results show that Methylprednisolone treatment can be used in all age groups.

The dissertation's findings and recommendations contribute significantly to the clinical management and treatment of acute bronchiolitis in children under 2 years of age, providing a more personalized and age-specific approach to therapy. To report the effect of therapeutic treatment, specific vital signs are monitored - heart rate, respiratory rate, oxygen saturation, and blood pressure.

The recommendation to discontinue the use of Budesonide in all age groups and unnecessary use of Ventolin in children under 6 months of age will reduce the risk of hospital-acquired infections and unnecessary use of inhaler treatment, as well as discomfort for patients of this age. Adhering to the recommendations for age-defined treatment of AB in children up to 2 years of age will reduce complications and mortality.

6. Evaluation of Publications and the Doctoral Candidate's Personal Contribution

Regarding the doctoral dissertation, Dr. Angelov presents four publications: 2 publications in Bulgarian journals and 2 publications in international journals. The doctoral candidate has participated in two national congresses and conferences. The presented publications meet the minimum requirements for obtaining a Ph.D. degree as per the regulations of MU Plovdiv.

7. Abstract

The abstract has been prepared in accordance with the requirements. It accurately and concisely reflects the concept, methodology, execution of the doctoral work, and the obtained results.

CONCLUSION

The doctoral dissertation contains scientifically applicable and practical results that represent an original contribution to the field and meet all the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria, the Regulations for the Implementation of the law, and the relevant Regulations of MU-Plovdiv. The materials presented and the dissertation results fully comply with the specific requirements of MU-Plovdiv.

In conclusion, I believe that the doctoral dissertation presented by Dr. Boris Petrov Angelov on the topic "Therapeutic Possibilities in Acute Bronchiolitis in Children Under 2 Years of Age" represents a comprehensive and in-depth study that addresses the needs of both science and practice in understanding a common pathology in children under 2 years of age. Dr. Angelov provides recommendations with significant practical value for the treatment of bronchial

obstruction in children with acute bronchiolitis under 2 years of age, depending on their monthly age, which will lead to age-specific therapy and reduce complications and side effects of the applied treatment.

The doctoral dissertation demonstrates that the doctoral candidate, Dr. Boris Petrov Angelov, possesses in-depth theoretical knowledge and professional skills in the scientific specialty, showcasing qualities and abilities for conducting independent scientific research. Given the above, I confidently provide a positive evaluation for the conducted research, the presented dissertation, the abstract, the achieved results, and contributions, and I recommend to the esteemed academic jury to confer the educational and scientific degree of "Doctor" upon Dr. Boris Petrov Angelov in the doctoral program 03.01.50 Pediatrics.

October 30, 2023

Prepared by:

Assoc. Prof. Dr. Ina Geneva, M.D