

# **STATEMENT**

**by Assoc. Prof. Natalya Usheva, MD, PhD**

**Department of Social Medicine and Healthcare Organisation  
Faculty of Public Health, Medical University "Prof. Dr. Paraskev Stoyanov", Varna**

**For the doctoral thesis of  
Tanya Liubomirova Zlateva, MD**

**on**

**Organization and results of a program for early detection and follow-up  
of children born small for gestational age (SGA)**

**Scientific supervisor: Prof. Violeta Iotova, MD, PhD, DSc.**

Doctoral program in the area of higher education 7. Health and Sports, professional field 7.1. "Paediatrics" at the Department of Paediatrics at the Faculty of Medicine, Medical University "Prof. Dr. P. Stoyanov" - Varna.

According to Order No P-109-135 /05.04.2024 of the Rector of the Medical University of Varna I was appointed as an internal member of the Scientific Jury and with the decision of its first meeting (Protocol 1/17.04.24) I was designated to prepare a Statement.

## **Brief biographical data and career development of the PhD student**

Tanya Zlateva was born in 1992 in Veliko Tarnovo, where she completed secondary education in the Nature and Mathematics High School "Vasil Drumev" (2011). In 2017 she graduated from Medical University - Varna with a very good grade in Medicine.

In 2019, Dr. Tanya Zlateva is enrolled for full-time doctoral studies at the Department of Paediatrics of the Faculty of Medicine at the Medical University - Varna and specialization "Paediatrics" in the Paediatric Intensive Care Unit at the I Children's Clinic of the University Hospital "St. Marina" - Varna.

Dr. Tanya Zlateva began her professional career in 2017 as a doctor in the Children's Emergency Department of St. Marina University Hospital - Varna, and since 2019 - a doctor in the Children's Intensive Care Unit at the same hospital. Medicine. In 2020, after winning a competition for the academic position "Assistant Professor", Dr. Zlateva was appointed to the Department of Paediatrics of the Faculty of Medicine - Varna.

During her medical studies Tanya Zlateva participated in national and international seminars, trainings and conferences. After her graduation, Dr. Zlateva took a very active part in scientific projects:

- 3 international "Feel4Diabetes" (2017 - 2019), LENA (2018), "DigiCare4You" (from 2022) ;

- 2 national - "Cardiovascular and metabolic risk associated with visceral adipose tissue in patients with long-standing type 1 diabetes mellitus" (2019 - 2021), Program for timely detection and follow-up of preterm and term infants born small for their gestational age (2021).

Membership: Bulgarian Medical Association (BMA), the Bulgarian Paediatric Association, the Bulgarian Association of Neonatology (BAS), the European Society of Paediatric Endocrinology (ESPE).

### **General characteristics of the thesis**

The submitted by as. Dr. Tanya Zlateva dissertation contains 180 standard pages and is illustrated with 11 tables, 29 figures and 16 annexes.

The bibliographic list includes 238 sources, of which 10 in Cyrillic and 228 in Latin. The material is structured in the following well-balanced main sections. Literature review - 32 pages; Chapter II. - Material, methods, aim and objectives - 16 pages, Chapter III. Results - 52 p.; Chapter IV. Discussion -28 p., Conclusions, Contributions and Conclusions- 5 p., Publications related to the thesis. Appendices; References used.

### **Relevance of the dissertation**

Growth abnormalities in children are a very important issue for paediatricians and many other professionals who face the negative consequences of this, including public health ones due to the resulting health, social and economic inequalities. Worldwide advances in methods for diagnosing and influencing growth abnormalities show a very high degree of development and accessibility, especially with the administration of growth hormone to children who are developmentally delayed due to various conditions (syndromes and abnormalities or those born small for gestational age (SGA) and lacking postnatal catch-up growth. In Bulgaria, two programs are in place to identify conditions associated with growth hormone deficiency or syndromic short stature, and what is



distinctive about the situation in our country is that cases of delayed diagnosis with the resulting treatment failures are not rare, which makes the topic of the dissertation of as. Tanya Zlateva is particularly topical and important for individual children and their families and for society as a whole.

### **Dissertation evaluation**

The *Literature review* thoroughly presents the historical development of knowledge about small for gestational age newborn, defining the term SGA according to international organizations and scientific publications, clearly and appropriately differentiating the two conditions, often incorrectly interchangeable in the literature, SGA and intrauterine hypotrophy, the incidence of the condition, and the possible reasons for the differences found between time periods for a single country as well as between countries. There is also an important focus on the study of risk factors and complications of SGA, in which the PhD student demonstrates skills in in-depth analysis and establishing links between phenomena. A literature review has also been done to justify the methods chosen in the own study with a description of the applied research.

The *aim* of the dissertation is clearly and comprehensively formulated and is aimed at the establishment, implementation and evaluation of a pilot study (Program) for identification, follow-up and prevention of health outcomes of term and preterm SGA infants in Bulgaria, to build a basis for its introduction into routine neonatology and pediatric practice.

*Eight research tasks* were adequately set in order to fulfil the stated aim.

### *Material and methodology of the study*

The applied methodology consists of a documentary and survey method with author's questionnaires to assess the material facilities in the neonatology units, the knowledge of the workers on the problem, the degree of application of the Program for timely detection and follow-up of preterm and premature infants born SGA in the participating neonatology structures. The time periods of the different stages of the Programme and the collection of empirical material are presented. Uniformity in concepts and methods for measuring and weighing children is also important from a methodological point of view and for reducing errors arising from the measurement. Clinical methods cover all necessary and possible applied ones to collect reliable and adequate data, precisely framed in a Tracking Algorithm provided for the field work. A

method to study the degree of coverage of the problem in the population was also used, and an assessment of the recognition and social impact of the project was set. Statistical methods and software used for data analysis are duly described.

Permission from the Research Ethics Committee of the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna is correctly presented.

### *Characteristics and evaluation of the results and contributions of the thesis*

The systematic literature analysis to identify literature sources on the issues of SGA children in Bulgaria and for the relevant period show the PhD student's skills for a thorough approach and work with scientific literature, as well as the limited number of publications for the time period studied 1990-2020.

The study of the knowledge of practicing neonatologists about the incidence and complications associated with SGA birth shows a high rate of return (over 90%) and hence the significance of the results obtained. A worrying fact is the inadequate provision of neonatology units with adequate measuring equipment, which inevitably affects the accuracy of the diagnosis. The knowledge gaps determine the importance of refresher trainings for both theoretical and methodological training on the problem of accurate diagnosis of SGA.

The stages and results of the implementation of the Programme for timely detection and follow-up of preterm and term infants born, SGA newborns in the participating neonatology facilities are presented in a comprehensive and thorough manner. Critical to the applied nature of the program are the identified and clearly articulated barriers and predisposing factors to program implementation. The progress and experience of the implementation of the Programme by individual unit is presented in detail and by month. There are inexplicable difficulties in the implementation and follow-up of the Programme due to the low level of cooperation in some of the participating regions. Also worrying is the lack of evidence of systematic assessment and definition of SGA newborns according to the Fenton criteria or any other criteria.

The results of the data analysis from 409 SGA newborns are presented in detail in tabular and graphical form. The evaluation of media monitoring with photographs and analysis is elaborated and the high attendance of the page by both families of SGA newborns and health professionals shows the importance and need for the promotion of accessible, complete and reliable information on the problem studied. Interim results from the survey of endocrinologists are also presented, showing the barriers and enablers to implementation of the Programme, as well as overcoming the problems



associated with the epidemic situation in COVID-19, staffing and other organisational challenges. Comparisons in the incidence of SGA between units and with data from other countries are adequately and multifacetedly discussed. Important from a practical point of view is the detailed Algorithm for Management of SGA newborns. The guidance and thorough mentoring support of the supervisor is evident throughout, and this dissertation appears to be a continuation of issues previously explored by the supervisor and requiring resolution without further delay in time.

### **Abstract and publications on the thesis**

The abstract to the thesis is written on 58 pages, reflects the structure of the study correctly and contains a detailed description of the methodology and the most important results and conclusions of the study.

In conjunction with the dissertation, the PhD student submitted three full-text publications in which she was the lead author. Two of the articles are published in Bulgarian and one in English. Tanya Zlateva also indicates four participations in scientific forums, two of which are with international participation.

### **Conclusion**

The dissertation on *"Organization and results of a program for early detection and follow-up of children born small for their gestational age"* is a complete scientific work, dedicated to a very important and relevant topic, implemented in representative and targeted samples, with significant contributions, providing a rationale for subsequent health policy and organizational actions on early detection and coverage of children born small for their gestational age and reducing barriers to their implementation.

The dissertation fully complies with the requirements of the Act for the Development of the Academic Staff of the Republic of Bulgaria, the Regulations for its implementation and the Rules for the Development of the Academic Staff of the Medical University – Varna.

In connection with all of the above, I give my *positive assessment* and recommend the Honourable Scientific Jury to award the PhD degree in the scientific specialty "Paediatrics", professional field 7.1. Medicine and the area of higher education 7. Health and Sport to *Tanya Lyubomirova Zlateva, MD*.

Заличено на основание чл. 5,  
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Varna

Prepared by: .....  


Assoc. Prof. Natalya Usheva, MD, PhD