



STATEMENT

By Prof. Dr. Yana Dimitrova Bocheva, MD , PhD

Head of Department "Clinical Laboratory"

Faculty of Medicine

at Medical University "Prof. Dr. P. Stoyanov" – Varna

Regarding the PhD thesis of Dr. Boyan Nikolaev Delev, PhD student of independent training in the PhD program "Clinical Laboratory" at the Department "Clinical Laboratory", Faculty of Medicine, MU - Plovdiv, for acquiring educational and scientific degree "Doctor of Medicine" in the field of higher education 7. Health and sports, professional field 7.1. Medicine and Doctoral Program "Clinical Laboratory", with scientific supervisors Prof. Dr. Tanya Deneva, MD., PhD and Assoc. Dr. Boyan Nonchev, MD, PhD

According to Order No. R-141/11.01.2024 of the Rector of the Medical University of Plovdiv and with the decision of the first meeting dated 15.01.2024. of the Scientific Jury, approved by the above-mentioned order, I am assigned to prepare an opinion for a dissertation on the topic "Study of thyroid function in healthy pregnant women from the region of Plovdiv and development of population-specific reference limits of thyroid-stimulating hormone for each trimester of pregnancy" on d- r Boyan Nikolaev Delev.

The opinion is prepared according to the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria (LAD). The submitted documents are in accordance with Art. 70 (1) of I. Section. Acquisition of educational and scientific degree "DOCTOR" in MU-Plovdiv; Regulations of MU-Plovdiv dated 28.01.2021. The PhD student has attached 3 full-text publications, of which one article referenced in Scopus and/or Web of Science, two participations in scientific forums and in one institutional scientific project. All stages of the PhD studies have been observed, there is no change to the original topic and supervisors.

Brief biographical details of the applicant

Dr. Boyan Nikolaev Delev was born in Yambol, where he graduated from Vasil Levski Polytechnic High School in 1992. He graduated from Medical University - Plovdiv in 2002. with a magister's degree in medicine. Acquired a specialty in clinical laboratory in 2008. In the same year, he acquired the qualification "Internal oditor" from the Center for Quality at the Technical University, Varna, and in 2011 he also acquired the professional qualification "Health Management" from the University "Prof. Dr. Asen Zlatarov", Burgas.

Dr. Delev began his professional development as a resident physician in the Central Clinical Laboratory at the UMBAL "St. Georgi" EAD, Plovdiv, where he still works. Since 2016 is an assistant "Clinical Laboratory" at the "Clinical Laboratory" Department, MU-Plovdiv. From 02.06.2021, Dr. Delev is a PhD student of independent training in the "Clinical Laboratory" doctoral program at the "Clinical Laboratory" Department, Faculty of Medicine, MU - Plovdiv.

He speaks English. He is a member of the Bulgarian Medical Union and the Bulgarian Society of Clinical Laboratory.

Relevance of the topic

The topic of the presented dissertation work has been selected carefully and targeted in view of the clinical interests of the dissertation student. Dr. Delev's scientific interest and the choice of a topic focused on pregnancy and its course is of undeniable medical and social importance. Pregnancy - normal or pathological, the outcome and birth of a healthy and viable fetus, as well as the reasons that led to complications or unfavorable outcomes for the mother and the newborn are and will be the subject of scientific research by various multidisciplinary teams.

The problem of defining reference values of thyroid indicators during pregnancy to serve as criteria for starting treatment and avoiding unnecessary medication intake is also relevant in modern medical practice. Currently, in Bulgaria, there is a lack of targeted and systematic studies on the problem, and there are few laboratories that have established their own TSH reference limits for the period of pregnancy. The development of population-specific reference limits for TSH is a matter of priority importance for endocrinologists, and studies in this direction are encouraged in the consensus opinions of all European and world thyroid organizations.

In this context, I consider the conceptual project of this dissertation presented to me for evaluation to be current in conception, prospective in publication results, and classic in methodological execution.

Characteristics, volume, structure, and content of the dissertation

The dissertation is set out on 110 standard pages, including: Introduction - 2 pages, Literature review - 32 pages, Aim and tasks - 1 page, Materials and methods - 10 pages, Results - 24 pages, Discussion - 8 pages, Conclusions - 1 page, Contributions - 2 pages, Conclusion - 1 page, Publications - 1 page, Bibliography - 21 pages, Appendices - 7 pages. The presentation consists of 14 tables, 11 histograms and 6 figures. The bibliography contains 263 sources, of which 5 are in Cyrillic.

The structure of the dissertation corresponds to the modern formulations of internal ratio of the parts of the dissertation with an emphasis on the results and with a brief discussion. A clear style is demonstrated, with a good command of highly specialized terminology.

The literature review is logical and well structured. It goes through a description of the physiological features of thyroid function during pregnancy, formulates risks to pregnancy and the fetus in thyroid dysfunction, and provides data on the prevalence and impact of thyroid autoantibodies in pregnant women.

The main text outlines the main diagnostic approaches in the assessment of thyroid function during pregnancy, including the ATA (2011) and BDE (2019) guidelines and concludes with the logical strongest argument for the research team in formulating the present topic, namely the main disadvantage of using fixed reference limits is the overdiagnosis of thyroid insufficiency, i.e. subclinical hypothyroidism. The latter determines the purpose of the present work: to study the functional, morphological and immunological characteristics of the thyroid gland in healthy pregnant women and to develop population-specific reference intervals of TSH and fT4 for the different stages of pregnancy.

The objective is clearly formulated and is a logical consequence of the conclusions in the literature review, corresponds to the title and is specified by the text of the tasks of the dissertation work

The dissertation formulates and is developed in fulfillment of 4 tasks, which are formulated precisely and meaningfully and functionally support the purpose of the scientific work.

Materials and methods

The study was prospective in design, including 120 healthy pregnant women in the first, second and third trimesters of pregnancy. The screened participants were recruited from outpatient obstetrics-gynecology and endocrinology practices from the Plovdiv region, as well as from the specialists from the Clinic for Endocrinology and Metabolic Diseases at UMBAL "St. Georgi" EAD - Plovdiv. 23 of the pregnant women were excluded because of established TSH values outside the reference interval applied to non-pregnant women and/or positive titers for anti-TPO or anti-Tg. All participants have a pre-signed "Informed consent to participate". A positive opinion was received from the Committee on Scientific Ethics at the Medical University of Plovdiv for the conduct of the study (Ex. No. R-172/21.01.2020).

The methods used are described in sufficient volume in the clinical and laboratory parts. The laboratory methods are precisely carried out and described with attention to each of the stages of the laboratory research - the standard pre-analytical rules and

pre-analytical sample preparation are observed. The analytical part is described without textual and semantic excesses. The latter also applies to the description of statistical methods when processing the results.

Results

In 24 pages, Dr. Delev describes in detail and consistently the implementation of the tasks, leading to the fulfillment of the formulated goal of his scientific work. 14 tables, 11 histograms and 6 figures have been compiled, accompanied by an understandable text, and the applied statistical methods of analysis have been correctly selected and correctly interpreted. For each of the three groups, demographic data, data related to fertility status and history and results of selected clinical and laboratory indicators are recorded. I consider the tasks set, in my opinion, adequate, clear and practically oriented, to be fully fulfilled.

The detailed approach and professional experience in their implementation and description in a scientifically structured text show the growth over time of the work on the dissertation of the practically oriented laboratory doctor to a scientifically oriented academic staff in the person of Dr. Delev. I consider full correspondence between the set goal, the formulated tasks, and the obtained results.

I accept the derived conclusions with an objection to the style of their formulation, emphasizing the allowed repetitions with texts from the "Results" chapter.

The dissertation concludes with a definition of 6 contributions. The used style and wording of the contributions does not allow them to be evaluated as scientific, applied, confirmatory or original. I recommend that the dissertation student reformulate the latter in the stylistics adopted in the scientific literature for this section.

Publications and announcements on the topic

The PhD student has attached 3 full-text publications on the topic of the dissertation, of which one article referenced in Scopus and/or Web of Science, two participations in scientific forums and in one institutional scientific project. In all publications, Dr. Delev is the first author.

The scientific activity of the PhD student is in accordance with the Law on the Development of the Academic Staff of the Republic of Belarus and the regulations for its application at the MU-Plovdiv.

The dissertation work "Study of thyroid function in healthy pregnant women from the region of Plovdiv and development of population-specific reference limits of thyroid-stimulating hormone for each trimester of pregnancy" by Dr. Boyan Nikolaev Delev covers the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Regulations for its implementation. The presented materials and dissertation results fully correspond to the specific requirements adopted in the Regulations of the Ministry of Education - Plovdiv for the application of the Law on the Development of the Academic Staff in the Republic of Bulgaria.

Based on the presentation, I give a positive assessment of the dissertation work and recommend to the honorable jury to award Dr. Boyan Nikolaev Delev the educational and scientific degree "DOCTOR IN MEDICINE " in the doctoral program in Clinical Laboratory.

4. 03.2024

Prof. Dr. Yana Dimitrova Bocheva, MD, PhD

Varna



Заличено на основание
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