

OPINION

By Assoc. Prof. Kalina Zlatkova Trifonova-Slaveykova, MD, PhD,

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At the Faculty of Medicine at Trakia University – Stara Zagora

On the basis of Order No. R-109-405 / 20.11.2024 of the Rector of the Medical University "Prof. Dr. Paraskev Stoyanov" – Varna

Subject: The dissertation of Dr. Anna Nedyalkova Ilieva-Krasteva, PhD student at the Department of Eye Diseases and Visual Sciences at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna on the topic: "**Screening program for retinopathy of prematurity - regional application, results, prospects**" for the acquisition of an educational and scientific degree "Doctor" in the scientific specialty "Ophthalmology", professional field 7.1 "Medicine", field of higher education 7. Health and Sports with supervisor Assoc. Prof. Yana Manolova, MD, PhD

Information about the PhD student:

Dr. Ilieva was born in the year 1991. She completed her secondary education in 2009 at the First Language High School in Varna with intensive study of English. In the period between 2009 – 2015 she studied medicine at the Medical University "Prof. Dr. Paraskev Stoyanov" – Varna, graduating with honors. The following year, she began her residency at the University Specialized Hospital of Eye Diseases for Active Treatment – Varna and received a specialty in Ophthalmology in 2021. Dr. Ilieva is a full-time PhD-student in the scientific specialty "Ophthalmology" at the Department of Eye Diseases and Visual Sciences at MU-Varna. During her doctoral studies, she participated in the educational activities of the department, leading exercises for students in medicine, dentistry, medical optics and optometry. At present, Dr. Ilieva is part of the teams of specialists of MC Sanita and MC Heylan 4, Varna.

Data on the preparation of the dissertation:

The dissertation has a volume of 202 pages and is illustrated with 34 figures and 17 tables. The dissertation includes the following sections: Abbreviations used – 4 pages; Content – 4 pages; Introduction – 2 pages; Literature review – 54 pages; Purpose and objectives – 1 page; Materials and methods – 8 pages; Results – 36 pages; Discussion – 41 pages; Conclusions – 4 pages; Contributions – 1 page; Publications related to the

dissertation – 1 page; Appendices – 4 pages; References – 40 pages; Acknowledgments – 1 page. The bibliography includes 481 literary sources – 13 in Cyrillic and 468 in Latin.

Relevance of the problem

Dr. Ilieva's dissertation focuses on retinopathy of prematurity (RP) – one of the many complications of prematurity. This is a disease directly related to the immaturity of the premature child, posing a risk of irreversible loss of vision with all the social and economic consequences of this, as well as purely logistical difficulties - the remoteness of intensive care units for premature babies from ophthalmological units, the need for coordination between specialists from individual treatment structures. The increasing number of children who are affected, as well as the legal aspects – claims by parents in case of an unfavorable outcome, are part of the problems facing the medical community.

The **literature review** is extremely detailed and in-depth, and not only authors from the world literature are analyzed, but also the condition of the problem in Bulgaria so far. It is noteworthy that the latest trends in the diagnosis and treatment of the disease are also considered.

The **purpose** of the dissertation is correctly formulated and 6 clear and well-structured tasks are set for its solution.

The study has received **permission from the Commission on Research Ethics** at MU-Varna. All procedures are in accordance with the requirements of good clinical practice and the **ethical standards** of the World Medical Association.

The **methods and materials** used are well described and properly selected.

The clinical **material** includes premature babies who have been screened for retinopathy of prematurity through the Specialized Hospital for Obstetrics and Gynaecology "Prof. Dr. Dimitar Stamatov" - Varna and followed up in the Hospital for Active Treatment - Varna for the period January 2017 to December 2020 including a total of 124 premature babies. The sample is large enough, as the criteria for screening of retinopathy of prematurity for our country, adopted in 2009 at a working meeting, are kept. The screened patients are divided into two groups – patients with and without RP, and the second group is divided into patients in need of treatment and those who do not need treatment.

A **survey** was also conducted among the students at the school for visually **impaired children** "Prof. Dr. Ivan Shishmanov" Varna, after receiving permission from the principal of the school. Data were collected on the age, gender and cause of visual impairment, according to the available medical information of visually impaired students attending the school in the 2022/2023 school year.

SPSS 26 was used for **statistical analysis** of the data. Descriptive, comparative, linear, and regression analysis were used.

For the study period, signs of RP were found in 86 children (**69.4%** of all children examined), and in 25 of them (**20.2%** of all children examined) the disease progressed to RP requiring treatment. The remaining 61 children (49.2% of all children studied) showed signs of spontaneous regression of the disease. The **risk factors on the part of the fetus and the mother** for the development and progress of RP have been analyzed. The early post-therapeutic effect of intravitreal administration of **anti-VEGF** drugs has also been evaluated. This is a relatively new modality for the treatment of RP, which has been gaining momentum in the last two decades as a rapid and atraumatic technique. The results of research at the School for Visually Impaired Children show that RP is the **second most common cause of visual impairment (8.6%)** after optic nerve atrophy. The PhD student has also developed a **web-based information** portal for parents and medical professionals to provide up-to-date information on the problems related to RP. The results are extremely interesting and well-illustrated, and each task by itself is worthy of a separate dissertation. The work that the PhD student and his supervisor have put in is huge and very profound.

I personally **cannot formulate any remarks** regarding the PhD-student's dissertation, as well as any serious shortcomings, and the **contributions from it are indisputable.**

In connection with the dissertation, the PhD-student has presented **4 publications** in full text, in each of which she is the first author, as well as one participation in a congress.

I give my **positive assessment** of the dissertation developed by Dr. Anna Ilieva-Krasteva on the topic "Screening program for retinopathy of prematurity – regional application, results, prospects". The volume of the dissertation, the relevance of the problem, as well as the in-depth analysis give me a reason to propose to the Scientific Jury to also vote positively for awarding the degree of "Doctor" to Dr. Anna Nedyalkova Ilieva-Krasteva.

Date: 10.12.2024

Signature: .

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/Assoc.Prof. Kalina Trifonova, PhD, MD/