

OPINION

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

Department of Otorhinolaryngology and Ophthalmology,

at the Faculty of Medicine at Trakia University – Stara Zagora

On the basis of Order No. R-109-404 / 20.11.2024 of the Rector of the Medical University "Prof. Dr. Paraskev Stoyanov" – Varna

Subject: The dissertation of Dr. Konstantina Grigorova Kancheva-Bandramalieva, PhD student at the Department of Eye Diseases and Visual Sciences at the Medical University "Prof. Dr. Paraskev Stoyanov" – Varna on the topic: **"Place and role of food supplements in ophthalmological practice"** for the acquisition of the educational and scientific degree "Doctor" in the scientific specialty "Ophthalmology", professional field 7.1 "Medicine", field of higher education 7. Health and Sports with scientific supervisor Prof. Z. Zlatareva, MD, PhD.

Information about the PhD student: The biography of the PhD student is quite impressive. Dr. Konstantina Grigorova Kancheva-Bandramalieva graduated from the German Language High School "Johann Wolfgang von Goethe" - Burgas with excellent results in 2005. Then she enrolled at the University "Duisburg-Essen" in the city of Essen – Germany, where she graduated as a Master of Medicine in 2012. She practiced at the Specialized Eye Clinic "Provisus" - city of Essen, Germany and at University Clinic for Eye Diseases "Inselspital" - city of Bern, Switzerland. She returned to Bulgaria in 2013 and began her residency in 2014 at the Specialized Hospital for Eye Diseases for Active Treatment in Varna. In December 2020, she acquired a specialty in Ophthalmology. Since the end of 2020 she has been enrolled as a PhD student in Ophthalmology at the Department of Eye Diseases and Visual Sciences, Medical University Prof. Dr. Paraskev Stoyanov - Varna. She has attended numerous congresses and courses in the country and abroad, participating in a number of national ophthalmological forums. She is married, has two children and possesses a promising future in clinical and surgical ophthalmology, along with a strong desire to develop scientific and academic activities.

Data on the preparation of the dissertation: The dissertation contains 173 pages, including 10 tables and 28 figures. 465 literary sources are cited, 5 of which are in Cyrillic and 460 in Latin. Another 22 tables have been added to the annex. 7 chapters are presented, corresponding to the purpose and tasks set and meeting the requirements for dissertation's design.

Relevance of the problem: Related to the aging population, in the near future it will be increasingly necessary to develop new therapeutic strategies in the fight against the leading causes of blindness, among which is glaucoma. The high frequency and irreversibility of changes in visual functions, along with the associated high disability place glaucoma in the group of **socially significant diseases**. It is important to develop new treatment strategies for glaucoma patients that stop or **slow down the progression of the disease without impairing the quality of life**. One possible and easily applicable accompanying therapeutic option would be the use of dietary supplements with antioxidant and neuroprotective properties.

The **literature review** is long enough, interesting and well-structured. The huge number of literature sources that the author has used is impressive. The literature review describes the research methods for glaucoma, the various theories related to the damage to ganglion cells by this insidious disease and the alternative methods of treatment associated with them. In this regard, neuroprotection appears to be a promising aspect in the fight against glaucoma, by improving the survival and function of neurons.

The **goal** is clear and well-structured, and five correctly formulated tasks are set for its implementation.

This study has received permission from **the Research Ethics Commission** of MU-Varna. The patients have signed an **informed consent** to participate in the study.

The patients in the study are divided into **three groups**, one of which was a control group and included patients with glaucoma who did not take dietary supplements, in the other group the patients took the dietary supplement Mielooptik, and in the third group Citizin. According to the author of the scientific work, the sample is not large enough, but since in all three groups there **are enough statistically significant results**, I don't find this a weakness. The type of study that Dr. Kancheva has conducted is at the **top of the hierarchy of clinical trials**, as it examines the sample of patients prospectively and longitudinally. The implementation of this type of study is very laborious and expensive but gives the best results in terms of monitoring the effect of external factors, in this case medications. The sample included is relatively homogeneous, as patients are selected according to **well-defined inclusion and exclusion criteria**. The different stages of the disease in the three groups of patients would lead to a certain bias in terms of results, but this disadvantage is taken into account by the author.

The description of the **results** shows **good knowledge of the subject, depth in the analysis and the serious clinical knowledge and skills of the author**. The used **research methods** and the indicators are modern and accurately analyzed. The **statistical methods for analyzing** the data used are well selected and the results are well illustrated. For statistical processing, SPSS 24 was used and descriptive, variational, graphic, dispersion and correlation analysis were performed.

No side effects were reported as a result of taking the dietary supplements, but an improvement was reported in the parameters examined with computer perimetry and optical coherence tomography when taking both types of dietary supplements, more noticeable when taking Mielooptik.

Five well-formulated general **conclusions** were made. The **contributions** of the PhD student's work are significant and would contribute to the development of science, as well as the treatment and slowing down the progression of primary open-angle glaucoma. **For the first time in Bulgaria**, a prospective longitudinal study has been conducted with the follow-up of functional and structural changes in patients with glaucoma who take the dietary supplements Mielooptik and Citizin. It is noteworthy that no other such study with Mielooptik has been found in the world literature. The benefit of using **dietary supplements with neuroprotective and antioxidant properties has been proven as an additional opportunity** to slow down the progression in patients with primary open-angle glaucoma.

My main **remarks** are related to the lack of specifics in the title and the lack of a description of the accompanying topical antiglaucoma therapy and systemic diseases of the patients that would affect the results.

In relation to the dissertation, the PhD-student has presented **4 publications**, for which she is the first author, along with three participations in scientific forums on the topic.

I give my **positive assessment** of the dissertation thus developed. The volume of the dissertation, the relevance of the problem, as well as the in-depth analysis give me reason to propose to the Scientific Jury to vote positively for the award of the degree "DOCTOR" to Dr. Konstantina Grigorova Kancheva-Bandramalieva.

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Signature:

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