

## **OPINION**

By Prof. Dr. Tsvetomir Ivanov Dimitrov, Department of.....

regarding

dissertation of Dr. Neli Krysteva Nikolova-Petkova for awarding the educational and scientific degree "Doctor" in the field of higher education 7. Health and Sports, professional field 7.1. Medicine, scientific specialty "Ophthalmology", code 03.01.36.

on the topic "Biological therapy of the anterior ocular surface, a step towards personalized ophthalmology".

By order of the rector of MU-Varna number..... and decision of the scientific jury, I am appointed to prepare an opinion on the topic indicated above (as an external member of the Jury) for the acquisition of the educational and scientific degree "Doctor" by Dr. Neli Nikolova-Petkova.

### **Biographical data**

Dr. Neli Nikolova-Petkova graduated from the Medical University - "Prof. Dr. Paraskev Stoyanov", Varna in 2011. In 2013, she began her specialization in the field of ocular pathologies at SBOBAL- Varna. Since 2018, she has been working as a specialist doctor at USBOBAL- Varna. In 2019, she was enrolled as a full-time doctoral student at the Department of Eye Diseases and Visual Sciences of MU-Varna. Since 2023, she has been working as an assistant at the Department of Optometry and Occupational Diseases, MU-Varna. She participates in numerous specializations, courses and international conferences. Her scientific interests are focused on the anterior segment of the eye, oculoplastic and aesthetic surgery, contactology and refractive surgery, monitoring and treatment of patients with glaucoma and diabetic eye.



The topic of the dissertation is current.

### **Structure of the thesis**

The dissertation contains 228 pages, including 52 figures and 12 tables. 176 sources in Latin are cited. 11 chapters are presented, corresponding to the aim and the tasks set and meeting the requirements of the ZRASRB and the Regulations of MU-Varna.

### **Literature review**

The presented literature review is comprehensive. The anatomy and physiology of the components of the anterior ocular surface, the etiology and pathogenesis of persistent epithelial defects, modern methods for diagnosis and treatment of patients with impaired anterior ocular surface have been examined in detail. Based on the literature review, 5 conclusions have been made, which necessitate the need to conduct an in-depth study - the subject of this dissertation's work.

### **Aim**

To conduct a detailed analysis of a wide range of eye diseases characterized by persistent epithelial defects and to assess the clinical effectiveness of the applied therapeutic approaches.

To achieve the stated purpose, the following tasks have been set:

1. To conduct a review of the publications in the literature and an assessment of modern diagnostic approaches in conditions associated with persistent epithelial defects and the therapeutic approaches applicable to them.
2. To assess the etiology of diseases characterized by persistent epithelial defects in patients treated at USHEDAT - Varna.





3. To analyze the microstructural changes in the cornea in patients with persistent epithelial defects using in vivo confocal microscopy (Heidelberg Rerina Tomograph II Rostock Cornea Module (HRT II-RCM) and anterior segment optical coherence tomography (Cirrus HD-OCT 5000, Carl Zeiss Meditec, Inc).
4. To compare the results of the effectiveness of the treatment.
5. To assess the subjective symptoms and visual function in patients with persistent epithelial defects before and after treatment.
6. To create a scorecard for assessing the subjective and objective signs of patients with persistent epithelial defects, which will optimize the therapeutic approach.

### **Materials and methods**

The subject of the study are patients with persistent epithelial defects, 102 in number, who underwent treatment at USBOBAL - Varna for a period of four years, from 01.12.2017 to 01.12.2021

Patients were randomized into four groups depending on the underlying etiology, size and depth of the epithelial defect, absence or presence of infiltrate.

The methods used were documentary, clinical: biomicroscopy (Carl Zeiss Meditec AG), anterior segment optical coherence tomography (Cirrus HD-OCT 5000, Carl Zeiss Meditec, Inc.), in vivo confocal microscopy (Heidelberg Retina Tomograph II – Rostock Cornea Module, Heidelberg Engineering GmbH, Germany), therapeutic methods and statistical methods: IBM SPSS for Windows, v.20.0., analysis of variance (ANOVA) and analysis of variation.

### **Results**

The results obtained after conducting the study are presented with numerous tables and figures. An assessment was made of both the subjective symptoms



(pain, foreign body sensation, redness) before and after the respective treatment, as well as the objective signs (size and depth of the epithelial defect, injection, visual acuity).

### **Discussion**

In the discussion chapter, a consistent and systematic analysis of the obtained results is made, which are compared with those obtained by many authors, and the similarities and differences are noted and discussed. Their consistent nature is evident, as well as the clear formulation of the conclusions and definition of the contributions of the dissertation work.

The contributions of dissertation work are of a cognitive, scientifically applied and confirmatory nature.

The abstract is a short and clear form of the most essential part of the scientific work.

Based on the above, I assess the dissertation work of Neli Krasteva Nikolova-Petkova as a completed scientific work, that meets the scientific criteria specified in the Regulations for the implementation of the law on the development of the Academic Staff at MU - Varna.

The volume of the dissertation work, the relevance of the problem, as well as the exhaustive and in-depth analysis give me reason to propose to the members of the Scientific Jury to vote positively for awarding Dr. Neli Krasteva Nikolova-Petkova the scientific degree "DOCTOR".

Prof. Dr. Tsvetomir Ivanov Dimitrov

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