

kristina-semkova

To

The Chairman of the Scientific Jury,

Determined by Order of the Rector of the Medical University - Varna № P-109-224 /

19.05.2021,

proposed by the Department of Infectious Diseases, Parasitology and Dermatovenereology

(DC protocol №4 / 23.04.2021),

approved by the FC of the MF, MU-Varna (Protocol № 43 / 11.05.2021), MU-Varna

I enclose an Opinion

under the procedure for awarding ONS "**Doctor**"

of **Dr. Kristina Vasileva Semkova**

Field of higher education 7. Health and sports

Professional field: 7.1. Medicine

In the scientific specialty: Dermatology and venereology

Member of the Scientific Jury:

Professor Dr. Margarita Dimova Gospodinova-Bliznakova, MD

Head of Education Sector for Infectious Diseases and Parasitology, MU-Varna,

according to Protocol №1 / 26.05.2021

The opinion has been prepared in accordance with the requirements of the Law on the Protection of the Rights of Persons with Disabilities and the Regulations of the Medical University of Varna.

Opinion

From Professor Dr. Margarita Dimova Gospodinova, MD

Head of the Infectious Diseases and Parasitology Training Sector,

MU-Varna

of Dissertation work

for awarding the educational and scientific degree "Doctor"

of Dr. Kristina Vasileva Semkova, PhD student in independent form of education

Field of higher education 7. Health and sports

Professional field: 7.1. Medicine

Doctoral program - Dermatology and Venereology

Form of doctoral studies - independent preparation

Department of Infectious Diseases, Parasitology and Dermatovenereology, MF, MU-Varna

Topic: **Hemangiomas in infancy and childhood - epidemiological characteristics and therapeutic behavior**

Supervisors: Assoc. Prof. Dr. Zhana Stoyanova Kazandjieva, MD

Prof. Dr. Sonya Stoyanova Marina, MD

The set of documents provided to me on electronic media includes 14 components in accordance with legal requirements of the Republic of Bulgaria and the regulations of MU-Varna.

Analysis of the candidate's career profile.

Dr. Kristina Semkova completed her higher medical education at the Medical Faculty at the Medical University - Sofia / diploma №12954 from 15.11.2005 /. Dr. Semkova specializes in the Department of Dermatology and Venereology at MU-Sofia and acquired a specialty in 2013 with a series of diplomas AC 014172 from 03.03.2014. She holds a Master's degree in Clinical Dermatology and a specialization in Dermatohistopathology from the St John's Institute of Dermatology, London, UK. From July 2017 works as a consultant dermatologist and deratohistopathologist at St. Thomas Hospital, London, UK. On 16.08.2018 is enrolled as a doctoral student in an independent form of study in the doctoral program "Dermatology and Venereology" at MU-Varna.

The **dissertation** on "**Hemangiomas in infancy and childhood - epidemiological characteristics and therapeutic behavior**" is contemporary and of great practical importance. It discusses the current classifications, the main clinical and epidemiological aspects of pediatric hemangiomas, risk factors for their occurrence and therapeutic approaches to them. It includes 131 standard pages, requirements for scientific work and the Regulations of MU-Varna. It contains a literature review, purpose and tasks, materials and methods, results and discussion, conclusions and bibliography. Dr. Semkova noted the contributions and publications related to the dissertation.

The literature review has a volume of 28 printed pages, and Dr. Semkova presents the epidemiology, risk factors, localization and therapy of pediatric hemangiomas. The risk factors for their occurrence are considered in detail. The survey is well structured, shows high awareness of the candidate and testifies to the possibility of proper analysis.

The goal and tasks are clearly and precisely defined. The goal corresponds to the topic, and the tasks are completely subordinated to the main goal.

The section "**Material and methods**" describes in detail the clinical and epidemiological studies; the reagents and materials used; statistical methods and ethical aspects. 304 children of both sexes, selected for an 11-year period (2010-2020), aged between 2 and 48 months, were studied. The main criterion for inclusion is the presence of hemangiomas in infancy or childhood, regardless of previous treatment. Children without prior treatment were included in the group to study the effectiveness of timolol 1% cream and timolol maleate 0.5% solution and gel-forming solution. The main criterion for exclusion from the study for active treatment is hemangioma in the final stage of reversal.

The obtained **results** are summarized in the following sections:

- Epidemiological study to assess prenatal and postnatal factors associated with an increased risk of developing hemangiomas in infants and children in the Bulgarian population
- Development of a scale for assessing the activity and severity of hemangiomas, which is suitable for initial assessment and follow-up of treatment
- Prospective study of the therapeutic effect and safety profile of a new drug for topical treatment of hemangiomas in infants and children - topically applied timolol maleate.
- Study of the efficacy and safety of timolol maleate 1% emulsion / gel
- Study and assessment of parents' perception of the psycho-social effect of children's hemangiomas on the quality of life of the family

The "**Discussion**" section covers 17 printed pages. An increased incidence of hemangiomas in girls was confirmed, representing 68.4% of the study group. Tissue hypoxia is discussed, and the dissertation describes nine children with hemangiomas born with an umbilical cord wrapped around the neck and secondary hypoxia. HASI validation studies show promising results in terms of clinical benefit and applicability in practice. The index is easy and fast to apply, gives a clear idea of the activity of the hemangioma at a given time and does not take

significant time from the clinical consultation. The proposed rating scale can be used by dermatologists and pediatricians and to be introduced as a routine standard method for unified and objective determination of the activity and severity of hemangiomas in infants and children. The study for topical application of timolol maleate is the first of its kind in Bulgaria, and the results confirm published studies from different countries. For all hemangiomas included in the study, improvement was observed at 12 and 24 weeks of treatment. The results in the dissertation show extremely good tolerability, efficiency and safety in the application of timolol maleate 1% emulgel, the results of which are comparable to those of timolol maleate 1% drip solution for ocular administration. 48 families participated in the quality of life study and the results obtained fully support the concept of a significant effect of hemangiomas on the psychosocial functions of the daily lives of patients and their parents.

The **conclusions** made by the doctoral student derive from the results of the dissertation work and correspond to the set goals and objectives. 7 conclusions were made based on the results of the research. Of particular importance is the conclusion that the local treatment of hemangiomas with timolol maleate leads to a reduction in the size of the hemangioma and accelerates the process of reversal. Active treatment with timolol reduces the risk of a pronounced cosmetic defect and residual changes, as well as the risk of ulceration and secondary infection.

On page 102 are marked the **contributions** from the dissertation, of which 5 contributions are of original character, 2 - of scientific-theoretical and 4 - of scientific-applied nature. The dissertation has complied with all critical remarks made in the internal defense of the dissertation.

The **bibliography** includes 168 literature sources.

Dr. Semkova presents 4 **publications** related to the dissertation, three in international journals, one in a Bulgarian journal and 10 scientific papers at Bulgarian and international forums.

The **abstract** consists of 75 pages. It is illustrated with tables and figures of high technical quality.

Conclusion

The dissertation is up-to-date, carefully constructed and well executed. It helps to clarify the role of risk factors for the development of hemangiomas, to establish the effect of treatment with local beta-blockers and to determine the impact that pediatric hemangiomas have on family life.

The dissertation corresponds to the legal requirements of the Republic of Bulgaria and the specific requirements of the Regulations of MU-Varna. It gives an idea of Dr. Semkova's in-depth theoretical knowledge of hemangiomas in infancy and childhood and the problems of their treatment, as well as her ability for independent research.

I give a positive assessment of the dissertation and offer the esteemed scientific jury to award the educational and scientific degree "Doctor" to Dr. Kristina Vasileva Semkova.

Professor Dr. Margarita Gospodinova, MD

05.07.202

Varna

