



REVIEW

by Corresponding Member Professor Nikolai Konstantinov Tsankov, MD, PhD, DrSci

of the dissertation of associate professor Razvigor Borislavov Darlenski

on the topic:

"Structural and functional adaptation of the epidermal barrier after
birth and childhood"

for acquiring the scientific and educational degree

"DOCTOR OF MEDICAL SCIENCES"

The dissertation is written on 102 standard A4 pages. It includes 15 figures and 34 tables. The literature review covers 25 pages. The fact that the barrier function of the skin and the disorders that accompany it pose a risk to newborn babies and especially to premature babies with a gestational age of 23-25 weeks is emphasized.

Various environmental factors affect the postpartum development of the skin barrier and, respectively, the functional parameters of the skin. Disorders in the barrier function allow the penetration of contact allergens and various inflammatory substances, which leads to a violation of various regulatory mechanisms in human skin.

The developed problem acquires great importance in connection with the changes in the surrounding environment and the adaptation mechanisms of the epidermal barrier associated with the participation of corneocytes in immune processes.

From the set goal originate the set 8 tasks, which are related to hitherto unclear facts about the adaptation of the skin barrier after birth.

The chapter "Own research" summarizes the results of the three experimental studies. These include Raman in vivo skin spectroscopy, electron microscopy and biophysical methods for functional assessment of the skin barrier.

The research published in 2019 in the elite and high Impact Factor magazine "Journal of investigative dermatology" presents data on the three-dimensional organization of the epidermis and corneodesmosomes.

The results are in line with the hypothesis that the infant's skin undergoes functional and structural adaptation after birth and continues to change according to changes in the surrounding environment.

The conclusions are 11, they are well formulated and correspond to the set goal and tasks. The contributions are divided into scientific-practical (5 contributions) and scientific-theoretical (5 contributions) and generally combine the results of the dissertation.

The bibliography includes 170 literature sources. Most of them have been published in the last 5 years, which shows that the developed topic is relevant worldwide.

The abstract is written on 34 pages and reflects in an abbreviated form the research, conclusions and contributions of the dissertation.

The published scientific papers of the dissertation in connection with the presented dissertation are 13 in number. Of these, 6 are published in Bulgarian, 5 in English and 2 chapters of monographs published abroad.

Assoc. Prof. Razvigor Darlenski is the first author in 4 of the presented articles and in 1 chapter of a monograph.

Critical notes

I believe that the number of contributions should be reduced, indicating which of them are significant on a national scale. The number of pins can also be shortened by combining overlapping data.

Conclusion

I believe that the dissertation of Associate Professor Dr. Razvigor Borislavov Darlenski "Structural and functional adaptation of the epidermal barrier after birth and childhood" meets the Law on the Development of Academic Staff in the Republic of Bulgaria, the Rules for its implementation and the Rules of the Thracian University - Stara Zagora .

Some of the scientific and applied scientific contributions are original, which gives me reason to give high marks to the presented dissertation.

I propose to the esteemed scientific jury to award the educational and scientific degree "Doctor of Medical Sciences" by Associate Professor Dr. Razvigor Borislavov Darlenski.

Corr. Member Prof. Nikolai Tsankov

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