REVIEW

by **PROF. Dr. BORIS SAKAKUSHEV MD PhD**

for dissertation work
"ELECTRICAL INJURIES – CURRENT ASPECTS IN PATHOGENESIS AND SURGICAL APPROACH"

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for awarding the educational and scientific degrees "PhD"
in the specialty "Plastic, Reconstructive and Aesthetic Surgery"

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Electrical injuries are significant medical and social problem due to insufficient knowledge of their specific pathological changes, difficult diagnosis and complexity, and long-term treatment, leading not rarely to disabilities or severe functional deficits.

The dissertation is structured properly and contains 204 pages, 75 tables and 39 figures. It is finalized form with literature review - 68 pages, materials and methods - 6 pages, results - 58 pages, discussion - 18 pages, 13 conclusions, 3 appendices and reference of 20 pages with 281 titles.

The literature review is comprehensive, informative, up-to-date and critically presented. The characterization analysis of the main etiological factor - electric current is impressive and in the context of the pathogenetic mechanisms and changes in molecular factors that occur in electrical trauma, their clinical manifestations and therapeutic outcom.

The goal and the 7 tasks are formulated correctly and are achievable..

The material is impressive and sufficiently representative of a total of 707 patients treated in two hospitals over a period of 10 years. The author used 4 non-

operative and 8 operative methods, as well as adequate, modern statistical methods.

The results are analyzed, summarized, and presented clearly, understandably, and illustratively on 58 pages. Their processing allows for clinically and statistically significant findings.

In the "Discussions" section, the author offers a synthesis of the findings on the epidemiological characteristics of electrical inhalation and an original classification, that emphasizes the type of treatment, stage, visualizing them with high-quality photographs from his own material. He presents an original improved model for electrical burn patients approach in an algorithmic form.

In the 13th conclusions the author substantiates the need for a consistent and systematic approach to the treatment of electrical burns, following sequentially from complex pathohistological changes, clinical symptoms, degree of impairment, for which recommends standardized clinical chart for the patient, risk assessment and term and type of optimal operative or non-operative treatment strategy.

Dr. Prodanov's dissertation work undoubtedly owes original contribution of scientific nature - analysis of pathogenetic mechanisms and clinical and molecular manifestations, epidemiological analysis of this pathology and systematization of the applied operative techniques. Original practical contribution has risk assessment, the information card and the diagnostic-therapeutic algorithm for patients with electrical burns, which is a good for standardizing the approach to patients with electric burns.

The authors review of the dissertation is prepared correctly.

CONCLUSION

The dissertation of Dr. Prodanov provides key information for the etiopathogenesis, diagnosis, and treatment of electrical burns and is an original scientific overview, offering a modern approach to the problem.

I consider that the dissertation "Electrical injuries – current aspects in pathogenesis and surgical approach " corresponds to all the necessary requirements for the promotion to the educational and scientific degree "PhD", according to the doctoral program "Plastic and Reconstructive and "Aesthetic Surgery", for which I highly recommend to the honorary membership of the scientific jury to promote Dr. Stancho Stoyanov Prodanov to the educational and scientific degrees "PhD".

Plovdiv, 14.10.2025

Prof. Dr. B. Sakakushev MD PhD