

## **STATEMENT**

**By Professor Dr. Anastasiya Georgieva Trenova, DSc**  
**Department of Neurology, Medical University of Plovdiv**

On dissertational thesis for awarding educational and scientific degree

**'Doctor of Philosophy'**

Professional field *7.1 Medicine*  
doctoral program *NEUROLOGY*

**Author of the thesis: Dr. Neyko Valentinov Neykov**

**Form of the doctoral studies:** full-time

Department of Neurology and sleep medicine, Acibadem City Clinic, UMHAT Tokuda, Sofia

**Topic: „Impact of obstructive sleep apnea in patients with ischemic stroke”**

**Supervisor:** Prof. Dr. Ivan N. Staikov, PhD, Department of Neurology and sleep medicine, Acibadem City Clinic, UMHAT Tokuda, Sofia

### **1. General presentation of the procedure and the doctoral student**

The dissertation of Dr. Neykov and the presented set of materials are in accordance with the regulatory requirements of the Law on Professional Development of the Academic Staff in Bulgaria. The author is a full-time doctoral student at the Clinic of Neurology and Sleep Medicine, Acibadem City Clinic UMHAT Tokuda, with a professional focus on interdisciplinary neurological problems and a proven interest in sleep medicine.

### **2. Actuality of the topic**

Cerebrovascular diseases, and especially ischemic strokes, continue to occupy a leading position among the most significant medical and social problems. The impact of obstructive sleep apnea (OSA) on recovery from ischemic stroke (IS) is of particular relevance in the light of modern neurology and preventive medicine. The evidence that OSA is an independent risk factor for cerebrovascular events is increasingly convincing, but its timely and accurate diagnosis and effective treatment are still limited in the clinical practice. There is a lack of systematic Bulgarian studies in this area. Dr. Neykov's dissertation represents the first comprehensive attempt to track the results of CPAP therapy in patients with IS and concomitant OSA.

### **3. Methodology**

The aim of the study is clearly and precisely formulated. To achieve it, five tasks are derived, which determine in a logical sequence the individual stages of the research.

The study design is adequate to the objectives. The study comprised 304 patients – 200 with IS and OSA and 104 with IS without OSA, selected according to precisely determined inclusion and exclusion criteria, which is a prerequisite for the credibility and reliability of the results. Standardized diagnostic methods were used (respiratory polygraphy, polysomnography, NIHSS, mRS, Barthel Index). CPAP treatment was applied and evaluated according to widely accepted approaches and criteria. The analysis of the collected primary data was carried out using modern and properly selected statistical methods. The research is objective, well-controlled and methodologically correct.

## **5. Content and contributions**

The dissertation is presented on 124 standard typewritten pages, contains 45 figures, 12 tables, 7 appendices and 120 literary sources.

Six conclusions and 10 contributions are presented, including:

- Original contributions: this is the first study, investigating the impact of OSA in patients with IS conducted in Bulgaria;

the effect of CPAP on the clinical recovery during the first 3 months after an IS was demonstrated.

- Practical contributions: an algorithm for management of patients with IS and obstructive sleep apnea was proposed.

- Confirmatory contributions: reliable evidence for the relationship between OSA, atrial fibrillation, arterial hypertension and unfavorable prognosis in IS was provided.

## **6. Scientific activity**

Dr. Neykov is the author of 7 scientific publications, 4 of which in international journals including those with impact factor, and has participated in national and international forums. His scientific activity covers and exceeds the mandatory National Minimum science-metrics indicators for acquiring the educational and scientific degree "Doctor of Philosophy".

## **7. Author's summary of the dissertation**

The presented summary of the dissertation correctly reflects the content and results of the doctoral research. It is presented in a volume of 58 pages and complies with the requirements for structure and clarity.

## **CONCLUSION**

The dissertation of Dr. Neyko Neykov fully meets the criteria for scientific novelty, relevance, practical significance and methodological correctness. It contains a significant contribution to modern neurology and sleep medicine.

Based on this, I confidently give my **positive assessment**, and I invite the esteemed scientific jury to award the educational and scientific degree "DOCTOR OF PHILOSOPHY" to Dr. Neyko Valentinov Neykov.



Prof. Dr. Anastasiya G. Trenova, DSc

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