

OPINION

by Prof. Dr. Gospodinka Radeva Prakova-Vasileva, MD, PhD
Head of the "First Department of Internal Medicine and General Medicine" at the Medical Faculty of
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of a dissertation for the award of an educational and scientific degree
"Doctor", in the field of higher education 7. Health care and sports, professional direction 7.1.
Medicine, Doctoral Program "Occupational Diseases"

According to the Order of the Rector of the Medical University "Prof. Dr. Paraskev Stoyanov"
- Varna No. R-109-37/25.01. 2023 and Protocol No. 1/26. 01. 2023 from a meeting of the Scientific
Jury

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and Occupational Diseases", MU "Prof. Dr. Paraskev Stoyanov"-Varna.

Dissertation theme: "Occupational predisposition in asymptomatic strokes".

1. General presentation of the procedure and the doctoral student

The presented materials on an electronic medium is in accordance with the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Rules for its Application at the Medical University of Varna for the acquisition of the educational and scientific degree "Doctor", and includes all the necessary documents.

Dr. Vladina Miroslavova Dimitrova obtained her master's degree in medicine in 2013 from the University of Varna. In the same year, he started working as a doctor in an emergency center-Varna, Dolni chiflik branch. In June 2015, she was appointed as a specialist in Nervous Diseases in the Second Neurological Clinic of the University General Hospital for Active Treatment "St. Marina" EAD-Varna. Since 2017, he has been an assistant at the Department of Occupational Diseases, and since 2018, he has been a full-time Ph.D in the same scientific specialty. During her regular doctoral studies, Dr. V. Dimitrova participated in a number of thematic courses for postgraduate studies in the specialty, as well as courses regulating the training of doctoral students: basic methods of research work, ethics of scientific research, statistical methods for processing and presentation of data, communication techniques and presentation skills, etc. Her research interests are in the field of cerebrovascular diseases, deep brain stimulation, electroencephalography and occupational neurological disabilities.

Dr. V. Dimitrova-Kirilova is fluent in written and spoken English. He is a member of the Bulgarian Medical Union, the Bulgarian Society of Neurology and the European Stroke Organization.

2. Actuality of the dissertation

Cerebrovascular diseases occupy one of the first places in the ranking of the causes of permanent complications and death among the population. In recent years, there has been a tendency for stroke to occur about 15 years earlier in countries with a lower standard, which affects the population of working age, worsens the quality of life and determines the socio-economic importance of this pathology. A particular risk to the health of the population, given its significantly higher incidence compared to that of stroke, is asymptomatic (silent) cerebrovascular disease (ACVD). For every symptomatic stroke, there are about 10 "silent" cerebral infarctions. The factors of the working environment are an invariable part of the life of an individual of working age, and their impact is long-lasting, often with a high intensity and a combined effect. This determines the relevance of the dissertation aimed at studying occupational exposure and its role in the development of asymptomatic strokes.

3. Structure of the dissertation

The dissertation contains all the main sections. It is written on 122 standard pages, illustrated with 17 tables, 21 figures and 5 appendices. The bibliography contains 507 literary sources, of which

10 are in Cyrillic and 497 are in Latin. Own results are presented on 23 pages and follow the set tasks. The dissertation was discussed and directed for defense by the Department of Optometry and Occupational Diseases, Medical University "Prof. Dr. Paraskev Stoyanov"-Varna.

Literature review

The literature review, presented in 41 pages, shows sufficient knowledge of the problem. Dr. Vladina Dimitrova has systematized the historical development of occupational diseases, characterized the main risk factors for asymptomatic ischemic disorders of cerebral blood circulation, summarized the data on the influence of variable and non-variable vascular factors in asymptomatic disorders. Dr. V. Dimitrova has analyzed in detail the information on the influence of occupational factors such as stress, physical exertion, length of working hours, working posture, etc. on the incidence of asymptomatic strokes. A number of scientific reports have been cited on the effect of working conditions on modifiable risk factors for cerebrovascular pathology. The data are presented in a logical sequence, different aspects of the problem are outlined, which proves the skills of the doctoral student to evaluate and analyze scientific publications. In this section, the significant volume of consulted literary sources is particularly impressive, of which only 10 are in Cyrillic, and more than half are from the last 10 years. The conclusions drawn from the literature review determine the main goal of the dissertation work, aimed at researching the occupational predisposition in asymptomatic strokes. The literature review includes all aspects of the research and corresponds to the set six main tasks.

Research methodology

The chosen research methods allow achieving the set goal and obtaining an adequate answer to the tasks in the dissertation. The object of the study was a total of 151 patients with vascular risk factors, without anamnestic and clinical data of cerebral stroke or TIA. Patients were divided into two groups depending on the presence (41) or absence (110) of magnetic resonance imaging changes. Vascular and behavioral risk factors were assessed through medical records and a questionnaire that included a detailed occupational history. For the purposes of the study, laboratory and imaging studies - magnetic resonance imaging (MRI) of the brain were carried out. The Workplace Stress Scale (WSS) was used to assess stress, the Montreal Cognitive Assessment Test (MoCA) for cognitive disorders, and the Patient Health Questionnaire-9 (PHQ-9) for severity of depression. Modern software programs were used and appropriate statistical processing was done on the obtained results, which are presented in the form of tables and figures.

Results and discussion

The obtained results are presented and discussed in a volume of 31 pages containing 17 tables and 21 figures. Analysis of demographics revealed statistically significant differences between the two groups only in mean age, which was higher in the group with MRI changes. The presence of hypertensive disease, diabetes mellitus and ischemic heart disease determine a higher risk and show a correlation with MRI changes. A positive correlation was found between work experience, length of the working week, worker position and outdoor work on the one hand and the presence of MRI lesions. It has been proven that the risk of MRI changes increases with increasing work experience. The group with diagnosed MRI lesions showed a statistically significant higher mean number of working hours, such as a working week >55 hours and increased risk of asymptomatic disabilities. It was found that the largest number of the analyzed factors related to the profession (work experience, working hours/week, work posture, workload) determine the presence of hypertensive disease. Occupational exposure to organic solvents, toxic gases, noise and vibration significantly correlates with data on MRI changes. Statistically significantly higher values of the Stress Scale in patients with MRI lesions also determine the increased risk of occurrence of these disorders. No statistically significant difference was found between the two groups of patients regarding the results of the cognitive change test.

The dissertation ends with eight clearly formulated conclusions that correspond with the tasks

The contributions of Dr. V. Dimitrova's dissertation (four original and four confirmatory) are mainly scientific and applied in nature and consist in identifying the main risk factors for AIDCC (asymptomatic ischemic disorders of cerebral circulation) in patients of working age. The role of work experience, long working week (>55 hours) and workplace stress as factors that increase the risk of cerebrovascular lesions have been proven.

The bibliography is presented on 25 pages, contains 507 literary sources, (10 in Cyrillic and 497 in Latin), of which 60% are from the last 10 years.

4. Assessment of the publications and personal contribution

Dr. V. Dimitrova has presented 3 scientific publications in full text, of which she is the first author of 2 and 5 scientific events in conferences in our country with international participation.

5. Abstract

The abstract is structured in accordance with the requirements, contains 69 pages and corresponds to the dissertation. It is illustrated with 10 tables, 16 figures and 5 annexes.

CONCLUSION

The materials submitted for opinion give me reason to believe that Dr. V. Dimitrova has made a major contribution to the development of this dissertation, possesses theoretical knowledge and professional skills in the scientific specialty "Occupational diseases". The dissertation meets the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Rules for its Application at the MU-Varna. This is the basis for my positive assessment of the awarding of the educational and scientific degree "Doctor" in the scientific specialty "Occupational diseases", in professional direction 7.1. Medicine, from the field of higher education 7. Health care and sports of Dr. Vladina Miroslavova Dimitrova-Kirilova.

10. 03. 2023 г.
Stara Zagora

Prepared the opinion: 
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