

STATEMENT

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In compliance with the order of the Rector of MU Varna № P-109-121 / 16.02.2023 I was selected as member of the Scientific Jury, and on the basis of Protocol №81 / 06.02.2023 I was appointed to prepare a statement on the procedure for acquiring educational and scientific degree "Doctor (PhD)" in the field of higher education: 7. Health and sports, professional field 7.1 Medicine and specialty "Oncology", code 03.01.46.

On the dissertation on the topic: "Impact of distance and travel time to cancer center on lung carcinoma treatment outcomes"

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1. Significance of the problem, formulation of the aim and objectives

Primary lung cancer ranks second in prevalence among malignant neoplasms after breast cancer in women. Overall survival results are still far from encouraging. In countries with high quality healthcare, such as US and UK, the average 5-year survival rate is only 15.2 %. These data, in combination with an uncontrolled extremely high mortality rate exceeding that of any other malignant disease, place lung cancer in a category of socially significant disease. The imprint that a socially significant disease has on society makes it a priority for the health system. Targeted development of new drug molecules, improvement of surgical techniques, innovative technologies and investigation of various markers of predictive and prognostic value significantly improve overall survival and quality of life of patients.

Urbanization as a phenomenon is not only global in nature, but also in particular affects the individual and all spheres of his existence. Progress that modern medicine marks have strongest manifestation in major cities, where multiprofile hospitals and university centers are located, there are highly specialized physicians, the necessary technological base and in general conditions for fulfillment of all the requirements of modern recommendations. The basis of all recommendations is the application of the so-called multidisciplinary approach, bringing together different specialists to the oncology patients care. The multidisciplinary approach itself is a concept with formal meaning in the absence of necessary specialists, as happens in smaller

settlements. Going from general to specific, the dissertation examines in detail the role of multidisciplinary approach in diagnosis and treatment of patients with lung cancer, then thoroughly and understandingly exposes the problem of travel burden as predictive factor.

All this has led to the definition of a specific aim: *"To investigate the impact of distance and travel time to cancer center on lung carcinoma treatment outcomes"*. The aim and objectives are clearly formulated and serve fully the purpose and hypothesis of the study.

2. Dissertation structure

The presented dissertation contains 118 pages, of which: Introduction - 2 pages, Literature Review - 58 pages, Aim and objectives - 1 page, Hypotheses - 2 pages, Materials and methods - 1 page, Results - 9 pages, Discussion – 10 pages, Summary – 3 pages, Conclusions – 1 page, Contributions – 1 page, Publications and participations in scientific forums related to the dissertation – 3 pages. The dissertation is illustrated with 6 tables and 15 figures. The bibliography includes 259 titles, of which 1 in Cyrillic and 258 in Latin.

The structure of the dissertation is well balanced. The individual sections have logical consistency and complex content. The scientific work meets the requirements of the Law on the Development of the Scientific Staff of the Republic of Bulgaria.

3. Literary review quality

The doctoral student presents an in-depth analysis based on large literary volume. Up-to-date data on epidemiology and risk factors, genetics, epigenetics, diagnosis and treatment of lung cancer are exposed. As separate sections are distinguished: *"Role of the multidisciplinary team in the diagnosis and treatment of lung cancer"* and *"Influence of distance and time as predictive factors"*, which are directly related to the aims and objectives of scientific work and serve to perform logical and ethical integrity.

4. Methods and design of the scientific research

A retrospective non-interventional single-centre analysis including 9240 patients with histologically verified lung cancer is presented. Inclusion and exclusion criteria have been defined in advance, with selected patients meeting all inclusion criteria without exclusion criteria. The study is conducted in the period 2005 - 2020. Methods used for statistical analysis of the results obtained are described in detail and subdivided for the sake of clarity into two categories:

- Descriptive analysis of the studied group of patients;

- Correlative analysis between distance and time to reach the oncology center and overall survival.

5. Correspondence between aim, results and conclusions

There is a complete correspondence between the set aim, the formulated objectives and the results obtained. The confirmation of the original hypothesis lies on logical justification and statistical significance of the published results. Data from the conducted analysis are illustrated with the relevant tables, figures and graphs. The main focus of the work is the search for correlation between distance and travel time to the oncology center and survival of patients with lung cancer. The analysis reveals with statistical certainty that with the distance away from treatment center, survival decreases. This gives me reason to believe with complete certainty the aim of the scientific work for succeeded.

The discussion is a consideration of the problem from different points of view and, in its content, is a critical assessment of the author himself on the disadvantages and advantages of the dissertation.

6. Analysis of conclusions and contributions

A total of 7 conclusions have been formulated, synthesizing the most important of the results obtained. The conclusions are clear and specific. Some of the main contributions of the prepared analysis are:

- For the first time worldwide, an association between distance and travel time to the oncology center and survival of patients with lung cancer has been demonstrated using a retrospective analysis based on such a large patient cohort. The study included 9240 patients conducting active antitumor treatment;
- For the first time in Bulgaria, such large-scale analysis of patients with lung cancer is conducted, investigating the role of distance and time as prognostic factors in patients with lung cancer in an active phase of their treatment;
- For the first time in Bulgaria is investigated the dependence between individual clinical and pathological characteristics of patients with lung cancer and the distance to the oncology center where they are treated.

The doctoral student presents 6 scientific publications related to the dissertation.

The abstract contain 48 pages and it includes all the main chapters of the dissertation.

7. Conclusions

The dissertation thesis of Dr. Teodorika Vitalinova Panayotova is a thorough and comprehensively structured scientific development, the focus of which is an often-overlooked problem in real clinical practice. The topic is characterized by its relevance, extensiveness, and complexity. The methods applied are consistent with the formulated aims and objectives, the results are categorical, the conclusions are clearly described and the contributions are significant, not only with theoretical but also potential value of practical essence.

The dissertation on the topic "Impact of distance and travel time to cancer center on lung carcinoma treatment outcomes" meets the requirements for obtaining an educational and scientific degree "Doctor", meets the requirements of the Law for development of the scientific staff of the Republic of Bulgaria and the Regulations for its implementation.

Based on the above, I give a positive assessment of the dissertation of Dr. Teodorika Vitalinova Panayotova and propose to the members of the esteemed Scientific Jury to be awarded with the educational and scientific degree "Doctor".

Assoc. Prof. Eleonora Georgieva Dimitrova - Gospodineva, MD, PhD

