Statement of opinion

from **Prof. Dr. Aneliya Klisarova, MD, PhD, DSc**
Head of Department of Imaging Diagnostics, Interventional Radiology and Radiotherapy
Faculty of Medicine
Medical University "Prof. Dr. Paraskev Stoyanov" - Varna

for dissertation thesis for obtaining the educational and scientific degree
"Philosophy Doctor"
in the field of higher education 7. Healthcare and sports,
professional division 7.1. Medicine, scientific specialty "Medical radiology and X-ray
treatment (including use of radioactive isotopes)".

Dr. Tsvetelina Yordanova Petrova - Georgieva,

Department of Imaging Diagnostics, Interventional Radiology and Radiotherapy
Faculty of Medicine
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Title of the dissertation thesis:

Role of 18F-FDG PET/CT in the diagnostic algorithm in malignant epithelial tumors of head and neck

Dear members of the scientific jury,

By Order № P-109-437 from 05.11.2021of the Rector of the Medical University of Varna,
I was selected to participate as a member of the scientific jury with a statement of opinion
regarding the defense of the PhD thesis of Dr. Tsvetelina Yordanova

1. Significance of the problem and formulation of the purpose and tasks:

The topicality and significance of the problem are determined by the difficulties in
diagnosing of the malignant epithelial tumors of the head and neck, which are subject to the
interdisciplinary work of specialists from different clinics. The great variety of localizations in
the head and neck from a primary focus or unknown primary focus, expressed with metastatic
lymph nodes, give me grounds to point out that the visualization of the tumor as well as its
diffusion is particularly important for the determination of the subsequent therapeutic behavior.

The objective is clearly formulated and is aimed at determining the role of 18F-FDG PET/CT in the diagnostic algorithm in malignant epithelial tumors of the head and neck.

There are 6 tasks set by the candidate. They are formulated appropriately and correspond to the objective of the study.

2. Dissertation structure:

The dissertation thesis has a classical structure. It covers 121 pages and contains the following chapters: literature review, objective and tasks, material and methods, results and discussion, conclusions, contributions, recommendations for the practice, frequently asked questions and the related recommendations and CV. The thesis contains 28 tables, 22 graphs, 8 charts and is illustrated with 13 figures.

The proportions between the different chapters are observed. I would like to emphasize the fact that every chapter of the dissertation paper follows the logic of the set tasks and objective and the conclusions follow naturally from own results, the statistical data processing and the discussions.

3. Literary awareness of the candidate:

The literary review of the dissertation thesis covers 22 pages in which the author makes a thorough analysis of the state-of-art application of 18F-FDG PET/CT and proves that summarized and systematic data are lacking for the application of the method in various localizations of the malignant epithelial tumors of the head and neck in combination with other methods. The conclusions from the literary review are concrete and directly related to the aim and tasks of the scientific study.

4. Methodological level and design of the scientific research:

The scientific study includes 205 patients, who underwent 308 18F-FDG PET/CT investigations. The study includes patients with different localizations who had undergone physical examination and CT investigations as well as histological verification and a follow-up of minimum 12 months. The results were processed by means of statistical methods.

The research methods and the clinical material, chosen by the author, allowed her to achieve the set goal and the tasks determined for solution obtained an adequate answer.

5. Correspondence between the objective, results and conclusions:

There is a logical correspondence between the set objective, the obtained results, the discussion and the drawn conclusions. The presentation of own results and discussion cover 72 pages and are richly illustrated. They follow the course of the determined tasks and are presented in detail. The importance, the advantages and the drawbacks of the used methods are pointed out with an emphasis on the role of 18F-FDG PET/CT in the diagnostic algorithm in malignant epithelial tumors of the head and neck.

The presented data indicate a profound and detailed analysis made by the applicant in the diagnosis and the follow-up of the patients, which proves that the conclusions drawn are trustworthy.

6. Analysis of the conclusions and the contributions:

The dissertation thesis finishes with 11 conclusions and, in my opinion, 9 contributions although they are formulated as 5. I accept the contributions according to the author's self-assessment and I would like to point out that the PhD thesis is the first study of the diagnostic possibilities offered by 18F-FDG PET/CT for the localization of a primary tumor focus in patients with unknown primary focus and histologically proven metastatic neck nodes from flat cell cancer. For the first time in Bulgaria quantitative and qualitative evaluation is applied for the metabolic response locally and regionally in patients with malignant epithelial tumors of the head and neck. I would like to draw particular attention to chapters 8 and 9 from the author's summary of dissertation, in which the recommendations are presented to the clinical practice and the frequently asked questions together with evidence from our experience which find specific answers.

7. Nature of the critical remarks and recommendations:

I have no critical remarks to make, which could possibly question the methods, the evidence material, the discussion of the obtained results and the drawn conclusions.

8. Publications and participation in scientific events:

The results from the scientific study obtained by the author on the dissertation topic have been announced in 3 scientific journals and 4 scientific fora, of which three peer-reviewed abstracts, two published in the European Journal of Nuclear Medicine (2020) and one in E-journal of Otorhinolaryngology (2020), with high impact factor – 19.529.

Personal impressions from the candidate:

Dr. Tsvetelina Yordanova is a recognized specialist in nuclear medicine. She is among the young colleagues, who constantly develop and express pronounced interest not only in their everyday work but in the latest developments in our field. She is accurate, loyal to her colleagues and responsible not only to the members of the team of the Clinic of Nuclear Medicine but also to her colleagues from the other specialties.

9. Conclusion:

Bearing in mind the scientific merits of the dissertation thesis, namely the topicality of the problem and the obtained results, the significant conclusions and contributions of the candidate, I firmly recommend to the members of the scientific jury to confer the educational and scientific degree "Philosophy Doctor" to Dr. Tsvetelina Yordanova Petrova – Georgieva for her dissertation work entitled *Role of 18F-FDG PET/CT in the diagnostic algorithm in malignant epithelial tumors of head and neck.*

07.12.2021

Varna   Prof. Dr. Aneliya Klisarova, MD, PhD, DSc