Review

by Prof. Dr. Boyan Balev, Ph.D.

Department of Imaging Diagnostics, Interventional Radiology and Radiation Therapy,

Medical University "Prof. Dr. P. Stoyanov "Varna,

Clinic for Imaging Diagnostics of the University Hospital "St. Marina "Varna

determined by Order № P-109-199 from 29.04.2022 of the Rector of the Medical University - Varna, for a member of the jury of a competition for the academic position "DOCTOR" in the field of higher education 7. "Health and Sports", in professional field 7.1. "Medicine" and scientific specialty "Medical Radiology and Radiology (including the use of radioactive isotopes)",

of

Dr Marina Dyankova,

Department of Imaging Diagnostics, Interventional Radiology and Radiation Therapy,

Medical University "Prof. Dr. P. Stoyanov "Varna

Thesis: 68Ga-PSMA PET/CT IN PROSTATE CARCINOMA. ADVANTAGES AND PITFALLS

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

Early diagnosis of prostate cancer, recurrence and metastasis is particularly important in determining the clinical stage, therapeutic approach, risk stratification and patient prognosis. The dissertation is dedicated to the latest hybrid method 68Ga-PSMA PET / CT, demonstrating its advantages over other imaging methods and possible diagnostic errors in the interpretation of results.

The goal is clearly stated, stemming naturally from the literature review. The tasks, 6 in number, are formulated correctly and correspond to the purpose of the study. The dissertation has a classical structure. It is presented on 197 pages, contains 3 appendices and is illustrated with 85 figures and 50 tables. The proportions between the individual sections are observed.

2. Structure of the dissertation:

The bibliography includes 212 cited literature sources, of which 11 in Cyrillic and 201 in Latin, the majority after 2014.

The literature review of the dissertation is presented on 36 pages, where the author analyzes the current application of 68Ga-PSMA PET / CT and reveals that there is still no generalized and systematic data on the application of the method in prostate cancer in

combination with other methods. and possible diagnostic errors. The conclusions from the literature review are specific and directly related to the purpose and tasks of scientific research.

3. Correspondence between the goal, the results and the conclusions:

The scientific study included 386 patients for the two-year period 2019-2021, in whom staging and restaging 68Ga-PSMA PET / CT studies were performed. The results are processed using appropriate statistical methods.

Our own results and discussion indicate the importance, advantages and possible diagnostic errors of the 68Ga-PSMA PET / CT method, including various variations in physiological PSMA activity, pathological expression of PSMA antigen not associated with prostate cancer, and false-negative findings.

The results of the dissertation's research on the topic have found a place in 1 scientific journal and in 2 scientific forums, after a review published in the European Journal of Nuclear Medicine (2020).

4. Analysis of the conclusions and contributions:

The dissertation ends with 10 conclusions and 10 contributions, which are formulated in great detail and clearly. For the first time in Bulgaria, recommendations have been formulated for the use of the hybrid imaging method in various clinical cases, both in patients with biochemical progression after radical prostatectomy (low PSA values), in the initial staging of high-risk prostate cancer and in patients with ISUP grade 5.

5. Critical remarks and recommendations:

No critical remarks and recommendations

6. Conclusion:

Dr. Dyankova is a young and promising specialist with a strong interest in scientific work. Given the relevance of the problem and the results obtained, the significant conclusions and contributions of the dissertation, I strongly recommend the members of the esteemed scientific jury to award the educational scientific degree "Doctor" to Dr. Marina Ivanova Dyankova.

12.05.2022 г.

Varna

Prof. Dr. Boyan Balev .. ..