

## **STANDPOINT**

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Regarding the dissertation work of Dr. Boyan Ivanov Lazarov  
for awarding the educational and scientific degree "Doctor",

According to order No. R-109-480/14.12.2022. of the rector of the MU  
"Prof. Dr. Paraskev Stoyanov" – city of Varna

On the topic of: **"Comparison of the Gleason score from prostate  
biopsy and from radical prostatectomy"**

Dear Mr. Chairman,

Dear members of the scientific jury,

The presented dissertation is structured entirely according to the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Regulations for the Development of the Academic Staff at the Medical University "Prof. Dr. Paraskev Stoyanov" – city of Varna.

### **1. Brief biographical data**

Dr. Boyan Lazarov was born on February 13, 1977. After completing his secondary education in 1996 he was accepted as a medical student at the Medical University - Varna. He graduated from the same in 2002. From 2003 to 2008 he worked at "Ivan Lazarov" ASIMP, and from 2009 to the present time he works at "Sveta Anna" Hospital,

Varna. Since 2009 he is a certified urologist. Since 2019 he has been appointed as assistant in urology at the Medical University of Varna.

## **2. Brief description of the dissertation work:**

The dissertation contains 147 pages. Illustrated with 52 figures and 40 tables. The bibliographic reference consists of 155 literary sources, of which 36 are in Cyrillic and 119 are in Latin.

The dissertation consists of:

- ✈ - Introduction
- Literature review
- Conclusions from the literature review (Critical analysis of literature data)
- Purpose and tasks
- Material and methods
- Results
- Discussion of results
- Implications
- Conclusion
- Contributions
- Bibliography

Prostate carcinoma (PCa) is a socially significant disease, which in a number of developed countries is the most common malignant neoplasm in men. Already in the introduction, the dissertation notes the main task of the urologist in the treatment of PCa, namely the categorization of the tumor as high-, moderate- or low-risk, with the aim of maximum effective treatment with a minimum of side effects from it.

The literature review consists of 36 pages and includes the following sections:

- Etiology and epidemiology of PCa
- Diagnostics of PCa

- Pathoanatomical examination of the prostate biopsy material
- Pathoanatomical examination of the material after radical prostatectomy
- Prostate carcinoma staging
- Prostate carcinoma treatment - basic methods
- Critical analysis of literary data

Summarizing the results of the literature review, Dr. Lazarov makes a critical analysis of the same and shows that in a number of studies there is often a discrepancy between the Gleason score (GS) from biopsy and from radical prostatectomy - whether the discrepancy is more common for high- or in poorly differentiated prostate tumors.

Based on the analysis from the literature review, Dr. Lazarov sets the following goal:

To make a comparative analysis of the Gleason score values from prostate biopsy and from radical prostatectomy and to analyze its dependence on basic characteristics of prostate carcinoma.

To fulfill this goal, Dr. Lazarov sets the following tasks:

1. To analyze the values of the Gleason score of patients with prostate cancer who underwent radical prostatectomy at the Urology Clinic of the St. Anna Hospital - Varna, for the period 2013 until now, with a view to establishing a difference between the values of the biopsy and the material from the radical prostatectomy.

2. To analyze patients with highly differentiated prostate carcinoma (Gleason score up to and including 6 from biopsy) to detect statistically significant prognostic factors for a possible increase in Gleason score after radical prostatectomy.

3. To analyze the relationship between the change of the Gleason score and the perioperative characteristics of the patients – age, preoperative PSA, prostate volume, PSA density, data from the rectal examination, data from the pathoanatomical analysis after radical prostatectomy.

4. In the analysis of the main perioperative characteristics of the patients – to establish indicators pointing to high-risk prostate carcinoma.

5. In the analysis of patients - to evaluate the effectiveness of the new ISUP classification (modified Gleason system).

6. To analyze patient survival – overall, biochemical progression-free survival, metastasis-free survival.

7. To study the influence of Gleason score on patient survival.

In his dissertation work (material and methods), Dr. Lazarov analyzed and studied 203 patients, for the period January 2003 to month. May 2021, with carcinoma of the prostate, in which a radical prostatectomy (RP) was performed at the Urology Clinic of "St. Anna" Hospital - Varna. The data on overall survival, survival without biochemical progression, as well as the time until the appearance of metastases of the patients in the study were obtained from the registers of the "Marko Markov" oncology clinic, Varna.

In the dissertation, the author describes in detail the prostate biopsy techniques, the most common complications, and how to resolve them. The steps of retropubic and extraperitoneoscopic radical prostatectomy are also detailed.

The studied patients are divided into 3 main groups - first group - no change in GS after RP, second group - with increase in GS from RP (compared to biopsy), and third group - decrease in GS after RP. For processing the results, the author presents the statistical methods used (Kaplan-Meier test, Cox regression, Wilcoxon Sign Rank Test, Friedman test, etc.)

There is an impression of an increase of the number of patients undergoing RP in recent years, and this is most likely due to improvements in the diagnosis of PCa. There is also a trend towards an increase in cases of extraprostatic tumor spread after RP, which is probably related to the expansion of the indications for the application of RP.

From the total number of analyzed patients (203), in 70 of the cases (or 34.5%) there was a coincidence of GS from the biopsy and from the RP. The dissertation compares these data with the data from the literature (in the range from 29.2% to 58%).

The study also analyzed patient survival, ultimately concluding that it was greatest in those with no change in Gleason score after RP. This indicates that biopsy GS also has independent prognostic significance.

When analyzing patients using the new ISUP (modified Gleason system) classification, a better concordance was found between biopsy and RP results.

In the last section of his dissertation (contributions), Dr. Lazarov has presented five contributions, which I believe have a confirmatory and scientific - practical nature.

In connection with the dissertation work, Dr. Lazarov presents 2 publications.

### **3. Conclusion:**

In the dissertation presented to me, a study of extensive clinical material was carried out. The dissertation applicant has fulfilled the set scientific goal through the formulated tasks and has made correct and logical conclusions.

All this gives me the reason to give a positive assessment of the dissertation work and to confidently recommend to the members of the scientific jury to award the educational and scientific degree "DOCTOR" to Dr. Boyan Ivanov Lazarov.

31.01.2023

Respectfully.....



/Assoc. Prof. Dr. Plamen Dimitrov, MD/