

# Opinion

by Prof. Dr. Boyan Dobrev Balev, MD  
Department of "Image diagnostics, interventional radiology and radiotherapy"  
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of the dissertation work for the acquisition of an educational scientific degree  
"Doctor"  
in the field of higher education 7. Healthcare and sports,  
professional direction 7.1.  
Medicine, scientific specialty "Medical radiology and radiology (including use of radioactive isotopes)",  
Determined to prepare an opinion by order of the Rector of MU-Varna No. R-109-169 of  
28.02.2023 on

**Dr. Svetomir Sevdalinov Chakarov,**  
Department of "Image diagnostics, interventional radiology and radiotherapy"  
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Dissertation topic:

## **ROLE OF COMPUTED TOMOGRAPHY AND MAGNETIC RESONANCE ENTEROCOLOGRAPHY FOR DIAGNOSIS AND FOLLOW-UP IN CROHN'S DISEASE**

Scientific leader Assoc. Dr. Radoslav Yosifov Georgiev, MD

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

Crohn's disease is part of the group of inflammatory bowel diseases, and although it has long been described and studied, not all aspects of the diagnosis are sufficiently reliably clarified and classified. Image diagnostics has an extremely large role, both for the diagnosis and for the follow-up of a disease. The most commonly used methods are computed tomographic enterography and magnetic resonance enterography.

The aim of the dissertation work is clearly formulated, arising naturally from the literature review, namely to analyze the findings of a specific imaging study (enterocolonography under computer-tomographic and magnetic resonance control) and to optimize the process of diagnosis and follow-up of patients with Crohn's disease.

The tasks, 6 in number, are formulated correctly and correspond to the purpose of the study.

## **2. Structure of the dissertation:**

The dissertation contains 141 pages, divided into the following sections: introduction, literature review, aims and objectives of the dissertation, research methodology and organization, results and discussion, conclusion, conclusions, contributions and bibliography.

The literature review of the dissertation is presented on 47 pages, where the author analyzes the possibilities of imaging methods in diagnosing and monitoring Crohn's disease. The advantages and disadvantages of all applied imaging methods for evaluating the morphology of the small intestine are very comprehensively presented. The detailed analysis of the literature and the conclusions of the literature review are the basis for shaping the purpose and tasks of the dissertation.

The work is illustrated with 49 figures and 9 tables. The bibliographic reference includes 190 literary sources, of which 4 are in Cyrillic and 186 are in Latin.

The dissertation work is structured extremely accurately and comprehensibly, without harming the scientific statement.

## **3. Consistency between the objective, the results and the conclusions:**

The scientific study included 194 patients with histologically proven Crohn's disease, whose imaging, laboratory and clinical data were subjected to prospective and retrospective analysis. The study was based on the results of two imaging methods, CTE and MPE, demonstrating a variety of imaging symptoms of small bowel changes in Crohn's disease. The results were processed using appropriate statistical methods. For the period from 2017 to 2022, a total of 446 imaging studies were performed on these patients. The frequency of manifestation of 7 imaging symptoms was determined, as well as a correlation between them and laboratory indicators. The most frequently affected intestinal segments were determined. The most common imaging findings observed in patients with CDAI over 150 are comb sign and enlarged lymph nodes over 1cm.

In the own results and discussion, the importance, advantages and possible diagnostic errors of the methods are indicated. The advantage of CTE over MPE in Crohn's disease is highlighted. The author demonstrates that CTE and MPE can be used both for the diagnosis and follow-up of patients with Crohn's disease, as well as for determining the risk of disease progression.

The results of the PhD student's research on the topic have found a place in three full-text scientific articles and two oral presentations with printed abstracts at national scientific conferences in 2022.

**4. Analysis of conclusions and contributions:**

The dissertation concludes with 9 conclusions and 12 contributions.

The conclusions are formulated in great detail and clearly. Important conclusions are highlighted: definition of the most common imaging symptoms in Crohn's disease, determination of imaging markers for disease activity, correlation between specific laboratory, imaging and clinical signs allowing assessment of the severity of the manifestation and the prognosis of the disease.

Contributions are divided into three groups – original, confirmatory and practical. Three of the four confirmatory contributions are of the highest value. For the first time in Bulgaria, the results of CTE and MPE of such a large group of patients with Crohn's disease are examined and summarized; the Lemann index was calculated for all patients, and the MEGS was also calculated for the patients with MPE; ranked the most frequently affected CTE and MPE segments in patients with Crohn's disease. The fourth original contribution is essentially not.

The created "Questionnaire for the quality of life in inflammatory bowel diseases" is also of a contributing nature.

**5. Nature of critical remarks and recommendations:**

**I have no critical notes.**

**6. Conclusion**

Dr. Chakarov is a young and promising specialist with a marked interest in scientific work. Given the topicality of the problem and the obtained results, the significant conclusions and contributions of the dissertation, I strongly recommend to the members of the esteemed scientific jury to award the educational scientific degree "doctor" to Dr. Svetomir Sevdalinov Chakarov.

2.05.2023 r.

Varna

Prof= Boyan Balev .....

