

STATEMENT

by

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Included by order № P-109-182 / 15/04/2022 as a member of the scientific jury in the procedure for obtaining the educational and scientific degree “**Doctor of Philosophy**” in the professional field 7.2. *Dental Medicine* in the doctoral programme „*Therapeutic Dentistry* “

Author: *ALEXANDER IVANOV GEORGIEV*

Form of doctorate programme: regular

Department: Conservative Dentistry and Oral Pathology, FDM, MU – Varna

Topic: *EFFECT OF CARDIOVASCULAR DISEASE AND DIABETES ON THE DENTAL TREATMENT*

Scientific supervisor:

ASSOC. PROF. MIGLENA BALCHEVA - ENEVA, DMD, PHD

1. General presentation of the procedure and the doctoral student

The review of the documents shows that the procedure for expelling the doctoral student and the procedure of the announcement of the defense are followed, the documents are prepared in compliance with the requirements of the LDASRB, the Regulations for its implementation, and the Regulations on the terms and conditions for obtaining scientific degrees and holding academic positions at the Medical University – Varna. The doctoral student has attached the required **three** full-text publications.

2. Brief biographical data of the PhD student

Dr. ALEXANDER IVANOV GEORGIEV graduated in 2014 at the Faculty of Dental Medicine – Sofia, obtaining a Master’s degree in Dentistry. In 2019 he acquired a specialty in Oral Surgery. In the same year he acquired an additional qualification “Master in Health Management”. In 2018 he was enrolled as regular doctoral student at the Department of Conservative Dentistry and Oral Pathology, FDM, MU – Varna. The candidate has published as first author **3 full-text articles** in connection with the dissertation.

3. Relevance of the topic and expediency of the set goals and objectives

The topicality of the problem developed in the dissertation, in scientific and especially scientific-applied terms, is high. Cardiovascular and endocrine diseases (mostly diabetes) are socially significant diseases, widespread in Bulgaria. Dentists are not the specialists who are directly involved in the actual treatment of these nosological entities, but they are often the first to encounter the specific oral manifestations and adverse effects caused by the diseases themselves and their concomitant drug therapy. Dental treatment in such patients is difficult, especially when performing various dental surgical and invasive procedures, incl. placement of dental implants. In this context, the lack of specific protocols for dental treatment of this group of patients in our country is a serious omission, which justifies the main purpose of the presented dissertation.

4. Knowledge of the problem

The literature review of the dissertation is highly informative and consistently examines the relationships between general medical status and oral diseases, drawing attention to the socially significant for our country cardiovascular diseases and diabetes. Special attention is paid to diabetes and its impact on dental treatment, as well as the more common cardiovascular diseases and my impact on invasive dental treatment. A separate chapter discusses the groups of drugs used in cardiovascular diseases, with a focus on anticoagulant and antiplatelet therapy (aspirin, coumarin anticoagulants, direct anticoagulants and low molecular weight heparin) and their impact on invasive dental treatment. An important focus of the literature review is the chapter on the main invasive procedures used in patients with underlying diseases, as well as the prognosis of the treatment success in these patients. Attention is paid to the factors that compromise the therapeutic success of invasive dental treatment and the impact of systemic treatment of common diseases on oral status and treatment.

It can be concluded that Dr. Georgiev has thoroughly studied the topic. The review concludes with the formulation of unresolved issues, the most important of which is that patients suffering from cardiovascular diseases and diabetes can not receive adequate treatment without invasive dental procedures, which in turn pose unforeseen risks also. The lack of sufficient information and specific protocols for dental treatment of this group of patients in our country is the important conclusion that organically connects the review with the goal and tasks formulated by the doctoral student.

5. Research methods

The goal is clearly formulated, and the four tasks for its solution – logically and correctly selected. To solve them, a sufficient amount of clinical material was used (42 patients of both sexes, divided into 4 age groups, who underwent a total of 325 invasive procedures, including implants placement). Patients are divided into three groups – clinically healthy ones, patients with cardiovascular diseases, taking antiplatelet agents or anticoagulants, and diabetics. The selection of participants is subject to well-defined criteria. In the first task, the doctoral student aims to build a profile of the patient in need of invasive dental treatment in terms of age, gender and clinical health. In the second task the doctoral student examines the success of invasive treatment in healthy patients, in the third task examines the success of invasive treatment in patients with CVD and anticoagulant / antiplatelet therapy, and in the last task he examines the success of invasive treatment in patients with diabetes.

The methods and the pattern of conducting the researches are exhaustively described. The statistical methods used are correctly selected, which is a prerequisite for the reliability of the conclusions.

6. Characteristics and evaluation of the dissertation

The dissertation is written on 171 standard pages and is illustrated with 46 tables and 27 figures. The literature reference includes 172 literature sources, of which 4 in Cyrillic and 168 in Latin.

The dissertation begins with a literature review on the issue, which is competently written, informative and consistently examines the relationship between diabetes and CVD (and their drug therapy) and the oral health. The review clearly outlines unresolved issues, the most important of which is that patients with cardiovascular diseases and diabetes cannot receive adequate treatment without invasive dental procedures, which in turn pose unforeseen risks. This analysis organically connects the review with the goal and tasks formulated by the doctoral student.

After formulating the goal and the four tasks, the dissertation presents the materials and methods used in the dissertation.

The results of the clinical, paraclinical (laboratory) and statistical studies obtained during the tasks are correctly described and accompanied by well-structured tables and figures.

I believe that the dissertation has developed significant results, the nature of which can be defined as enriching the existing knowledge about several socially significant diseases in Bulgaria and their relationship with oral health, respectively the proposed protocols for invasive dental treatment in these patients. Discussion of the results is synthetic in nature and reveals the logical connection between them. A comparison was made between the own research data and the similar results found in the literature. The conclusions made are reliable and largely reflect the contributions of the developed work.

7. Contributions and significance of the dissertation for the science and practice

Two contributions of a scientific nature, two of an applied nature and two of a confirmatory nature have been formulated, which I accept in part. The most important contributions of the dissertation are the proposed protocols for invasive dental treatment of patients with cardiovascular disease (and antithrombotic or anticoagulant therapy) and patients with type 2 diabetes.

8. Evaluation of the publications on the dissertation

In connection with his dissertation, Dr. A. Georgiev has published three full-text articles. The first, published in the journal *Scripta Scientifica Medicinae Dentalis*, discusses invasive dental treatment in patients with type 2 diabetes. The second article, published in the *Varna Medical Forum*, examines the impact of medication on upcoming dental surgery in patients with hypertension. The third publication is in the journal *Medinform* and discusses the specifics of dental treatment in patients with diabetes. He is the first author in all three publications. As the publications were made in the period 2020-2021, they have not been cited and their impact is yet to be assessed, but given the relevance of the topic, I assume that they will attract the attention of the specialized audience.

9. Personal participation of the doctoral student

The personal participation of the doctoral student in the work, the results obtained and the formulated contributions are without a doubt. I must take into account that Dr. A. Georgiev has a specialty in oral surgery and clinical experience as an oral surgeon and dental implantologist, which is clearly evident in the choice of topic and specifics of the work performed.

10. Abstract

The presented abstract reflects in a synthesized form the structure and content of the dissertation.

11. Critical remarks and recommendations

As the doctoral programme has time constraints that do not allow to monitor and analyze the patients included in the study for a longer period of time, some of the conclusions may be adjusted. To the greatest extent this affects the success of implant treatment in patients with type 2 diabetes. In this sense, I recommend Dr. A. Georgiev to continue his observations on the same patients for a longer period of time.

12. Recommendations for future use of the dissertation contributions and results

I believe that the doctoral student A. Georgiev, who demonstrates in his dissertation good knowledge of the basic methodological tools needed for the analysis of such topics, can and should continue his future research in this direction. I consider the most important contribution of this work are the proposed protocols for invasive dental treatment of patients with cardiovascular diseases (and antithrombotic or anticoagulant therapy) and patients with type 2 diabetes. It is desirable for them to be more widespread, both among the dentists treating these patients and among the medical specialists who take care of their systemic health.

CONCLUSION

The dissertation **contains scientific, scientific-applied and applied results, which represent an original contribution to science and meet all the requirements** of LDASRB, the Regulations for its implementation and the relevant Regulations of MU – Varna. The presented materials and dissertation results fully comply with the specific requirements of MU – Varna.

The dissertation shows that the doctoral student ALEXANDER IVANOV GEORGIEV **has** in-depth theoretical knowledge and professional skills, **demonstrating** qualities for independent research.

Due to the above, I confidently give my **positive assessment** of the research presented by the above peer-reviewed dissertation, abstract, results and contributions, and **I invite the esteemed scientific jury to award the educational and scientific degree "Doctor"** to ALEXANDER IVANOV GEORGIEV in the doctoral programme "Therapeutic Dentistry".

13/06/2022

Reviewer:



(Assoc. Prof. Georgi T. Tomov, DMD, PHD)