STATEMENT

by Associate Professor Maria Stoyanova Dencheva, Ph.D., D.S.

Sofia Medical University, Faculty of Dental Medicine, Department of Imaging and Oral Diagnostics.

of a dissertation for awarding the educational and scientific degree 'doctor'

professional direction Dentistry

doctoral program .....Therapeutic Dentistry.....

Author: Dr. Boris Sashev Valkov

Form of doctoral study: full-time doctoral study

Department: "Conservative dentistry and oral pathology"

Topic: Study of the properties of temporary filling materials

Research supervisor: Assoc. Dr. Miglena Balcheva-Eneva, PhD, FDM Varna

1. General presentation of the procedure and the PhD student

The presented set of materials on an electronic medium is in accordance with Art. 69 of the Regulations for the development of AS in MU Varna.

Dr. Boris Sashev Valkov graduated as a doctor of dental medicine at the Medical University of Varna, Faculty of Medicine in 2017 . In 2018, he was appointed as a part-time assistant in the Department of Conservative Dentistry and Oral Pathology, and since 2019 he has been a full-time assistant in the same department. Dr. Valkov works as a private dental practitioner at Dr. Dimitrichka Valkova Clinic.

Dr. Valkov speaks English and German.

2. Relevance of the topic

The topic of the dissertation **Study of the properties of temporary filling materials** " is extremely interesting. The dental materials that are used for temporary obturation have remained in the background in scientific research precisely because such importance is not attached to their qualities, given the short duration of their stay in the oral cavity. However, it turns out that their properties such as bactericidal and possibility to ensure hermeticity are no less important to obtain a good final result. I admire the choice of such a topic and consider it relevant.

3. Knowing the problem

Dr. Boris Sashev Valkov shows in-depth knowledge and diligence in searching for literature sources on the clinical application of temporary filling materials in operative dentistry, in endodontics, the problems of microleakage and the sensitization of the body to their components. The colleague has referred to a total of 211 sources, 9 of which are in Cyrillic and 202 in Latin. The literature review is comprehensive and based on it, the aim of the dissertation work was derived, namely to investigate the properties of materials for temporary filling and their possibilities for storage of HTT and sealing of teeth/cavities during multi-stage treatment. In order to realize the aim Dr. Valkov formulated three tasks.

4. Research methodology and evaluation of results

The applied research methods for the three tasks are generally accepted. A microbiological study with three subtasks was included, a study on the micropermeability of temporarily filled teeth with different materials at two time periods, and establishing the sensitizing potential of components of temporary filling materials.

From the first task, it was established that eugenol has an antimicrobial effect against all tested microbial strains. When eugenol was combined with ZnO, the results overlapped to some extent with eugenol alone, and ZnO showed antimicrobial activity against *E. coli, C. albicans, and K. pneumoniae.*

In a second task, it was found that the lowest microleakage values were observed around the light-curing temporary filling materials, both at short-term residence and after a longer period. All three groups showed increased microleakage for a 14-day period compared to a 2-day period.

Regarding the results of the third task, an extremely low risk of oral symptoms caused by the ingredients of the temporary obturation materials is found. Sensitization and polysensitisation to the studied dental materials was registered more often in women. Most often, among the ingredients of temporary filling materials, zinc sensitizes.

Critical note: My main comment is directed at the performance of the third task, as no whole-product hapten testing of dental filling materials has been done. This would bring even greater completeness to the study. I recommend that if the colleague continues his scientific research in this direction, the testing with components should always be accompanied by testing to the final products of the dental materials.

5.**Characterization and evaluation of the dissertation work and contributions**

I believe that the dissertation work is structured correctly. The tasks are completed and the results are analyzed precisely. I accept the thus derived contributions with scientific and applied original characterter as well as those of a confirmatory nature.

6. **Assessment of the publications and personal contribution of the PhD student**

The doctoral student has submitted three scientific publications, participated in two scientific forums. For one of the articles Valkov B, Balcheva M. Temporary filling materials in endodontics – a literature review. Scripta Scientifica Medicinae Dentalis. 2022;8 (1): online first. Dr. Valkov attached a list of two citations. This scientific production meets the requirements established by the Regulations for the Development of the Academic Staff of the MU - Varna, Appendix 1.

7. Abstract

The abstract presented by Dr. Boris Valkov reflects the most important results of the conducted scientific research.

Conclusion

The dissertation contains scientific and scientific-applied results that represent an original contribution to science and meet the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for the development of AS in MU Varna.The dissertation shows that the doctoral student Dr. Boris Sashev Valkov possesses in-depth theoretical knowledge and professional skills in the scientific specialty of therapeutic dentistry, demonstrating qualities and skills for independent conduct of scientific research. Due to the above, I give my positive assessment of the research conducted, presented by the above-reviewed dissertation work, abstract, achieved results and contributions, and I propose to the honorable scientific jury to award the educational and scientific degree "doctor" to Dr. Boris Sashev Valkov in doctoral program in Therapeutic Dentistry.

20.06.2024

Prepared the statement:

Assoc. Dr. Maria Dencheva, MD, D.S.