

Review

From: Assoc. Prof. Dr. Janet Kirilova Nikolova, PhD.

Department of Conservative Dentistry,

Faculty of Dental Medicine,

MU – Sofia, member of the scientific jury according to order № P №P-109-247/09 .06.2021 of the Rector of MU – VARNA

Subject: Dissertation themed " **Comparison of treatment methods for chronic periapical inflammatory diseases**" for the award of educational and scientific degree "**Doctor**" in the doctoral program "Therapeutic Dental Medicine", in professional field 7.2. Dental Medicine, field of higher education 7. Health and sports.

Author: Dr. Denitsa Georgieva Zaneva-Hristova a self-training PhD student at "The Department of Conservative dental treatment and oral pathology", Faculty of Dental Medicine –Varna.

Scientific supervisor: Assoc. Prof. Dr. Tsvetelina Borisova-Papancheva, MD, PhD

1. General presentation of the procedure and the doctoral student

The presented set of materials on paper is complete and in accordance with Article 115 (1) of the Procedure for Awarding the educational and scientific degree "Doctor" in MU – Varna.

The doctoral student has enclosed 3 published articles, and 2 participations in scientific forums related to the dissertation.

2. Brief biographical data of the doctoral student

Dr. Denitsa Georgieva Zaneva-Hristova completed her secondary education at the High School in Varna in 2010 and her higher education at the Medical University of Varna, Faculty of Dental Medicine in 2016. Since October 2016 she has been an assistant professor at "The Department of Conservative Dentistry and oral pathology" at the Medical University of Varna, FDM. From 16.07.2018 Dr.

Denitsa Georgieva Zaneva-Hristova is a self-training PhD student. The doctoral student speaks and writes English and Russian.

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

Chronic periapical inflammatory diseases are often found (30-40% and more) after endodontic treatment. Their treatment is difficult, requires significant clinical time, specific clinical skills and equipment. As noted by Dr. Zaneva-Hristova, the removal of microorganisms in the complex endodontic space and prevention of additional reinfection associated with multi-visits to the dental practice is important for their treatment. Clarification of the issue - one-visit or multi-visits treatment of chronic periapical inflammatory diseases, with or without intracanal dressing, is a question discussed and studied in the literature.

The presented dissertation contains 185 standard pages and is illustrated with 46 tables and 96 figures. It is structured correctly and contains sections as an introduction; Literature review; Aim and tasks, materials and methods; results and discussion, conclusions; main contributions; publications and announcements related to the dissertation. The bibliography consists of 199 sources, 6 of which in Cyrillic and 193 in Latin, of which 54.8% are from the last 10 years.

4. Knowledge on the problem

The introduction is on 1 pages. It is clearly written and correctly introduces into the problem.

The literature review consists of 47 pages. The following are considered: the treatment of periodontitis by one-visit method and the used medications; treatment of periodontitis by a multi-visits method and the materials used; comparison between the two methods of treatment; data from microbiological examination of the root canal contents in teeth diagnosed with chronic apical periodontitis; postoperative pain; control of the results of the healing process in one-stage and multi-stage method; importance of CBCT for the diagnosis of chronic apical periodontitis (HAP) and monitoring of the healing process.

As a result of the analysis of the literature, Dr. Zaneva-Hristova analytically brings out the unsolved problems and aims to compare the methods of treatment of chronic periodontitis and compare and study the effectiveness of different materials

used for their treatment. The set tasks are 5 and are completely sufficient to achieve the goal of the dissertation.

5. Research methodology

Materials and methods are written on 17 pages. The materials are thoroughly described. A survey was conducted with 80 dentists and 71 patients, as well as a clinical study of 97 patients. The methodologies for each individual task are presented in detail. Modern methodologies for microbiological research, CBCTs, etc. were used. In this part the study is illustrated with own materials and methods for conducting the research.

6. Characteristics and evaluation of the dissertation work

Results and discussion are written on 77 pages. The results are thoroughly described, illustrated with figures and tables. A discussion follows the results of each task. The conclusions are divided into two pages.

Task 1. Dentists in 83.75% of respondents prefer multi-visits treatment of HAP. In 68.66% of cases, dentists use a calcium hydroxide dressing, and in 29.85% of cases they combine a calcium hydroxide dressing with iodoform, or indextol or chlorhexidine, or sodium hypochlorite. The exposure time of the dressing also varies. Dentists use different irrigation protocols and only 31.25% of respondents add chlorhexidine to treat the root canal space. Exacerbations and pain are reported as complications in 38.75% of cases. However, the survey data shows that in 26.75% of the respondents they do not adequately isolate the operative field. A concentration of sodium hypochlorite less than (33.75%) or equal to 2.5% (26.25%) is preferred, and the amount used is either less than 5 mm³ (42.5%) or between 5-10 mm³ (32.5%).

Regarding the postoperative sensitivity of the treated teeth is established by pronounced pain symptoms in patients treated in several stages and with the application of a temporary dressing.

There are 6 conclusions given.

Task 2. Study of the treatment of HAP by a single session method. Dr. Zaneva-Hristova found in large quantities in 61.29% of the studied *Enterococcus faecalis* (confirmatory contribution), in 12.90% of cases the presence of *Candida albicans*; in 6.5% of cases mixed flora; in 16.1% there is no infection. After the Irrigation of the root canals in one session, no microorganisms were found in 96.77% (with this method of microbiological examination). The results are statistically

significant. After the control period there is a statistically significant reduction in the size of the periapical changes. Dr. Zaneva-Hristova proves that the one-visit treatment of HAP gives statistically significant results, but in compliance with the irrigation protocol and adequate isolation of the operative field.

Task 3. Study of the treatment of HAP by multi-visits method, application of calcium hydroxide medication lasting one week. According to the selected criteria, the success rate is 50%. Dr. Zaneva-Hristova also found large amounts of *Enterococcus faecalis* in 75% of the studied teeth (confirmatory contribution); in 5% of the subjects there was no infection. After calcium hydroxide dressing in the root canals in 100% of the studied teeth no microorganisms are detected (in this method of microbiological examination). Patients reported pain after postoperative sensitivity after temporary dressing.

Task 4. To study the chronic periodontitis treatment using a multi-visits method by placing a sterile cotton swab between visits for one week. Dr. Zaneva-Hristova also found large quantities of *Enterococcus faecalis* in the studied teeth (confirmatory contribution); After one week without dressing in the root canals, 100% of microorganisms are not detected (with this method of microbiological examination). Author does not establish satisfactory results.

Task 5. Study of the treatment of HAP by multi-visits method and irrigation with chlorhexidine solution. Dr. Zaneva-Hristova found large quantities of *Enterococcus faecalis* in the studied teeth (confirmatory contribution).

The author proves that one-visit treatment of HAP successfully affects inflammatory periapical disease. 6 conclusions follow the tasks.2,3,4 and.5.

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

There are 2 contributions with original character and 3 with confirmatory character. I find the conducted in this way clinical study important, although the follow-up period is six months. I accept all three confirmatory contributions of the dissertation. Large amounts of *Enterococcus faecalis* (10^5) have been found in teeth with chronic periapical inflammatory disease. The efficacy of sodium hypochlorite and chlorhexidine solutions in the treatment of HAP has been confirmed. The author proves that one- visit treatment of teeth with chronic periapical inflammatory disease gives good healing results.

8. Evaluation of the publications related to the dissertation

The main parts of the dissertation of Dr. Zaneva-Hristova have been published in three original articles (in two of them she is a sole author), as well as two reports in scientific forums. The scope of articles and reports related to the dissertation is fully sufficient.

9. The participation of the doctoral student

Dr. Zaneva-Hristova is a leading author in the research, which emphasizes the personal contribution of the doctoral student. In some of the tasks the author had co-authors, which shows the ability of Dr. Zaneva-Hristova to work in a team.

10. Abstract

The content and quality of the abstract is concluded in 68 pages and meets the requirements. It reflects the main results, conclusions and contributions achieved in the dissertation.

11. Personal impressions

Dr. Denitsa Georgieva Zaneva-Hristova has performed a substantial research, the result of which is the presented dissertation. The results are presented in details.

12. Critical remarks and recommendations

The work has some technical omissions such as: the structure of the bibliographic reference; the design of the review should be more logical; the technical layout of the statistics would be easier to understand if presented in tabular form rather than as direct data from a computer program. Nevertheless, the volume of the dissertation is sufficient.

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

Dr. Denitsa Georgieva Zaneva-Hristova reports the knowledge of dentists in relation with the treatment of chronic periapical inflammatory diseases. The contributions of the current work are important for the daily practice of dentists. Probably a series of lectures, seminars, printed materials (practical guide,

monograph or study), etc. would be a guideline for updating the knowledge of students, specialists and dentists in this area.

Dr. Zaneva-Hristovaa, based on the conclusions of the research, points out new problems that can be used for further research.

CONCLUSION

The dissertation *contains scientific, scientifically-applied and applied results, which represent an original contribution to science* and **meet all** the requirements of the Law of the Development of the Academic Staff in the Republic of Bulgaria (LDASRB), the Rules for application of LDASRB. The presented materials and dissertation results fully comply with the specific requirements of MU – Varna.

The dissertation shows that the doctoral student Dr. Denitsa Georgieva Zaneva-Hristova **has** theoretical knowledge and professional skills in the scientific specialty "Therapeutic Dental Medicine", in professional field 7.2. Dental Medicine, field of higher education 7. Healthcare and sports by **demonstrating** qualities and skills for independent research.

Due to the above, I confidently give my **positive assessment** of the research presented by the reviewed dissertation, abstract, results and contributions, and **I offer the esteemed scientific jury to award the educational and scientific degree 'Doctor'** to Dr. Denitsa Georgieva Zaneva-Hristova in a doctoral program in "Therapeutic Dental Medicine", in a professional field 7.2. Dental Medicine, field of higher education 7. Health and sports.

18.8.2021
Sofia


Assoc. Prof. Dr. Janet Kirilova, PhD