



STATEMENT

by

Assoc. prof. Dr. Mario Petrov Milkov, MD, PhD

Head of the Department "Dental Materials Science and Propaedeutics of Prosthetic Dental medicine", Faculty of Dental Medicine, Medical University "Prof. Dr. Paraskev Stoyanov" - Varna, habilitated in the professional domain 7.1 Medicine, Medical University - Varna, member of a Scientific Jury, for awarding the educational and scientific degree - "Doctor"

Subject:

Defence of a PhD-thesis of **Dr. Gergana Diyanova Slivovska**, a self-training PhD student, according to an order of the Rector of Medical University – Varna, №P-109-58/15.01.2018, with the topic: „**Influence of chronic inflammatory processes of the teeth on the mucociliary transport of the maxillary sinus**“ for the award of the educational and scientific degree „Doctor (PhD)“, Professional domain 7.2. Dental medicine, Higher education: 7. Health care and sports, Specialty „Oral surgery“.

Scientific Supervisor: Prof. Dr. Tihomir Georgiev, DMD, PhD, DSc; Assoc. prof. Dr. Mario Milkov, MD, PhD

Brief biographical data of the doctoral student:

Dr. Gergana Diyanova Slivovska was born on 06.05.1986 in the town of Burgas, Republic of Bulgaria. In 2011 she graduated as a Master of Dental medicine from the Faculty of Dental medicine, Medical University "Prof. Dr. Paraskev Stoyanov"- Varna. In the period from October 2011 till 2013 she was a part-time assistant professor at the Department of "Oral and maxillofacial surgery and special imaging diagnostics" at the Faculty of Dental medicine, Medical University-Varna. In the period 2012-2013 Dr. Slivovska was an intern at the Clinic of Oral and maxillofacial surgery, University Hospital for active treatment "St. Marina"-Varna. Since 2013, Dr. Slivovska is a full-time assistant at the Department of Oral Surgery and special imaging diagnostics (currently the Department of Oral Surgery), Faculty of Dental medicine, Medical University-Varna. Since August 2020, Dr. Slivovska has recognized rights for the specialty "Oral Surgery". Since 2017 Dr. Slivovska is a self-training PhD-student at the

Department of Oral Surgery, Faculty of Dental medicine, Medical University "Prof. Dr. Paraskev Stoyanov"- Varna.

Relevance and structure of the dissertation

The presented dissertation is structured correctly, written over 174 pages from which: Content – 1 page, Abbreviations used – 1 page, Introduction – 3 pages, Literature Review – 30 pages, Aim and Tasks – 1 page, Materials and methods – 17 pages, Results – 98 pages, Discussion – 5 pages, Conclusions – 1 page, Contributions – 1 page, Publications and scientific reports, connected with the PhD-thesis – 1 page, References – 14 pages. The dissertation is illustrated with 32 histograms, 137 tables, 17 charts and 12 photographs. Contributions are seven (7). The bibliographic reference to the dissertation consists of 169 sources in Latin. The exhibition of the work is presented clearly and concisely in a very good scientific style.

The relevance of the developed topic is pointed out in the detailed and analytical literature review, which is sufficient in volume and thematically corresponds to the set tasks. The scientific works known so far on the topic are presented. The scientific literature concerning the risk factors, diagnosis, treatment and quality of life in patients with diseases in the field of oral surgery and otorhinolaryngology is analyzed.

The analysis of the literature review in the presented dissertation is up-to-date and includes a sufficient number of contemporary authors, dealing with the problems related to the tasks of the study performed.

My conclusion is that the author is well-acquainted with the issues involved.

The goal of the PhD study is formulated precisely and clearly. Through it, Dr. Slivovska gives the main directions of her research work, to study the peculiarities of the normal metabolism of the mucosa of the maxillary sinus and in various chronic inflammatory processes of an odontogenic origin.

The fulfilment of the goal was achieved through three (3) main tasks; modern diagnostic, clinical, sociological and statistical methods were used.

I believe that the set tasks fully correspond to the topic and are sufficient to achieve the scientific goal of the research.

The material is sufficient to derive reliable and representative results.

The study was approved by the Commission on Ethics of Research (KENI) of MU-Varna – Protocol №93/21.05.2020.

The object of study under task 1.1 were 536 CBCT-images of the upper jaw, of which 356 were used after applying certain criteria. Of these, a corresponding number of endodontically treated teeth were registered, and they were divided into groups depending on the apex-sinus distance. Studies have been performed and patients are divided into two groups depending on the distance between the apex of the tooth and the floor of the sinus. There are also 5 subgroups, according to relevant criteria. Under task 1.2, 108 CBCT images of patients with odontogenic cysts of the upper jaw, located in the area of the maxillary sinus, were studied. Again, similarly to task 1.1, based on measurements and examinations, groups and subgroups of patients were differentiated. Under task 1.3, 490 maxillary CBCT-scans were analyzed, and 319 of the images were used after applying criteria. Again, after targeted research, patients were divided into groups and subgroups.

Under task 2, microbiological samples were prepared, taken intraoperatively from the inflammatory focus around the causative tooth and from the altered mucosa of the maxillary sinus in order to prove the identity of the flora and to look for the relationship between the two pathological processes. 27 patients were selected.

Task 3.1 determined the activity of mucociliary transport in normal by analysis on 20 patients, and task 3.2 - assessed mucociliary transport before and after treatment of chronic odontogenic inflammation of the maxillary sinus - on 20 patients. Task 3.3 established the activity of mucociliary transport in the maxillary sinus intraoperatively in the surgical treatment of oroantral communication - on 20 patients.

The methods used were adequately focused on each of the tasks. The results were subjected to a detailed statistical analysis – descriptive and analytic methods, based on parametric tests, One-Sample T-test, Independent Samples T-test, One Way - ANOVA, Statistical Hypothesis Test, Chi-Square Distribution, Regression Analysis, Correlation Analysis. There is a rich illustration with histograms, tables and figures. They meet the set tasks by applying the necessary research methods.

The analysis of the results is accurate and critical. Nine (9) inferences have been deducted. The publications on the topic are sufficient in number (3) and well present the experience of the author.

The presented Conclusion of the PhD-work is logical and justifies the conclusions of the dissertation.

Contributions of the PhD-thesis are **seven (7)**, divided into two groups: of an original and of a confirmatory origin:

Contributions of an original origin:

1. The mucociliary transport of the maxillary sinus was measured for the first time after local plastic surgery for closing of the communication between the oral cavity and the maxillary sinus, and for the accuracy of the test, the saccharin granule was placed directly into the sinus cavity.
2. For the first time, the difference in the values when measuring the mucociliary transport of the maxillary sinus was taken into account, when the saccharin granule was placed on one side in the sinus cavity and on the other in the lower nasal passage.

Contributions of a confirmatory origin:

1. In the spread of the inflammatory process from the teeth in the distal parts of the upper jaw to the maxillary sinus, the available bone plays an essential role.
2. When the available bone between the apices of the teeth and the floor of the maxillary sinus is less than 3 mm, there was a high possibility that the process will ascend and affect the sinus mucosa - 96.7% of cases.
3. The most common causes of chronic odontogenic sinusitis are: Staphylococcus CNS, Peptostreptococcus, Prevotella sp., Fusobacterium spp., Alpha-hemolytic streptococcus and Porphyromonas sp.
4. In chronic inflammatory processes of odontogenic origin, it is good to prescribe the following antibiotics: Amoxicillin with clavulanic acid.
5. Any surgical trauma or chronic inflammation affects the intimate process of mucociliary transport and its self-cleansing function for the maxillary sinus.

The dissertation was carried out solely by the doctoral student under the guidance of her academic supervisors: Prof. Dr. Tihomir Georgiev, DMD, PhD, DSc and Assoc. prof. Dr. Mario Milkov, MD, PhD, and summarizes thoroughly, reliably and adequately the results reached. Theoretical knowledge of Dr. Slivovska on the research topic and her abilities to participate in and conduct independent research are demonstrated.

The abstract of the dissertation, written over 80 pages and very well illustrated with tables, photographs and diagrams, summarized its content in a concise form and meets the requirements and regulations of MU-Varna. The results of the research were popularized by the doctoral student in three publications.

CONCLUSION

My more than 20 years of experience as a clinician and instructor in the field of Otorhinolaryngology give me the reason to highly assess the presented PhD-thesis. Modern requirements of science are met. I believe that the topic of the dissertation of **Dr. Gergana Diyanova Slivovska** is of significant interest for the development of Dental medicine and Medicine as professional domains, and oral surgery and otorhinolaryngology as specialties. The PhD-thesis „**Influence of chronic inflammatory processes of the teeth on the mucociliary transport of the maxillary sinus**“ covers all scientific requirements of the law and rules of MU-Varna for the award of the educational and scientific degree "Doctor".

The scientific work, personal qualities and professional experience of the PhD student let me give a **POSITIVE** assessment to the Scientific Jury for the award of the educational and scientific degree - "Doctor" to **Dr. Gergana Diyanova Slivovska**.

01.06.2022

Varna

Reviewer:

/Assoc. prof. Dr. Mario Petrov Milkov MD, PhD/

