

СОФИЙСКИ УНИВЕРСИТЕТ
„СВ. КЛИМЕНТ ОХРИДСКИ”
МЕДИЦИНСКИ ФАКУЛТЕТ
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To the chair of examination committee
Appointed by order No P-1 09-246/13.06.2022
of the Rector of the medical university of Varna

STATEMENT

By Assoc. Prof. Iskra Dimitrova Takeva, MD, PhD

Scientific specialty "Physical and rehabilitation medicine"

Head of the Department Physical and rehabilitation medicine by Lozenetz University Hospital
Sofia

Head of the Department of "Neurology, Psychiatry, Physiotherapy and Rehabilitation,
Preventive Medicine and Public Health" at the Faculty of Medicine of Sofia University "St.
Kliment Ohridski",

RE: The thesis for awarding an educational and scientific degree "Doctor of Medicine" in the
field of higher education 7. *Health and Sport*, professional field 7.1. *Medicine*, scientific
discipline *Physiotherapy, Thalassotherapy and Rehabilitation*

PhD thesis: **“COMPARATIVE STUDY OF THE EFFECTS OF A CONVENTIONAL
PHYSIOTHERAPEUTIC COMPLEX AND HIGH-ENERGY LASER ON PATIENTS
WITH PERITENDINITIS OF THE GLENOHUMERAL JOINT”**

The PhD student: **Dr. Lilia Peycheva Panayotova-Ovcharova**, in full-time study at the
Department of Physiotherapy, Rehabilitation, Talasotherapy and Occupational Diseases of the
Medical University "Prof. Dr. Paraskev Stoyanov" - Varna

Scientific supervisor **Assoc Prof Dr Iliya Todorov Todorov, MD.**

I present a statement as an external member of of examination committee Appointed by order No P-1 09-246/13.06.2022 of the Rector of the medical university of Varna, based on the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Rules for its Application in the Faculty of Medicine - Varna.

Dr. Lilia Peycheva Panayotova-Ovcharova submitted all necessary materials, documents and references for the defense procedure.

Biography note for PhD candidate

Dr Liliya Peycheva Panayotova-Ovcharova was born on 25.01.1985 in Varna. She completed her secondary education in 2004, graduating from the First Language School in Varna, in 2010, she completed her higher education in medicine and was awarded the educational and qualification degree of Master at the Medical University of Varna, in 2017, she completed her higher education in health management and was awarded the educational and qualification degree of Master at the Medical University of Varna. She obtained qualification in Physical and Rehabilitation Medicine in 2020. Dr Liliya Peycheva Panayotova-Ovcharova was appointed as resident medical officer at UMPHAT Sveta Marina Varna EAD in 2017 and assistant to the Management Board for Thalassotherapy, Physiotherapy and Rehabilitation at the Department of Physiotherapy, Rehabilitation, Thalassotherapy and Occupational Diseases of MU Varna.

Relevance of the PhD-thesis

Peritendinitis of the glenohumeral joint has a high frequency in the population and significantly limits the activities and quality of life of the patients. The disease presents a challenge due to its difficult response to conservative treatment and the presence of recurrent and persistent pain in the long term. There are studies on the effect of Multiwave Locked System lasers (MLS), which are believed to have a direct impact on the pathogenesis of the disease, affect inflammation and significantly reduce pain. Unlike many of the traditionally used physical factors, their early application is possible. Due to the above considerations, I believe that the topic chosen by the PhD student is interesting and has scientific and applied value.

Structure of the PhD-thesis

The PhD-thesis is written on 151 standard pages, of which the literature review occupies 40, the methodology of the scientific study with results is 32 pages, discussion - 12

pages, contributions - 2 pages. The material is illustrated with 33 figures and 24 tables. The work ends with 15 appendices in which anatomical data, all used tests and scales and therapeutic approaches in the studied groups are presented. The bibliographic reference includes 272 titles, of which 26 are in Cyrillic and 246 are in Latin. About 50% of the citations are from the last ten years, 25% of which from the last five years.

The requirements for structure, layout and presentation have been met.

Characterization of the content

There is a logical and meaningful connection between the individual parts of the dissertation.

The **literature review** shows knowledge of the problem, presenting anatomical data and information on the kinematics of the shoulder complex, etiology, pathogenesis, pathokinesiology, clinical picture, diagnosis and options for operative and conservative treatment, with the emphasis on physical therapy. Global trends are in favor of both monotherapy and combination therapy, with a lack of consensus regarding MLS laser radiation for glenohumeral peritendinitis, a relatively new treatment for a number of musculoskeletal disorders, with scientific publications available since 2004.

The aim of the PhD-thesis is clearly formulated: to compare the effectiveness of two methods of treating peritendinitis of the glenohumeral joint - with MLS laser therapy (group A) and with combined therapy with microwave diathermy and interference current (group B).

To realize the set **goal**, the author identifies 5 **tasks** and 3 scientific **hypotheses** are formulated.

Material and method

The survey was conducted in the period from 26.11.2020 to 31.10.2021. in the Clinic of Physical and Rehabilitation Medicine of UMHAT St. Marina - Varna and the Department of Rehabilitation in hotel Estreya Residence in the resort Sts. Constantine and Helena

The clinical contingent is sufficient, as the sample size has been calculated. A total of 76 patients with peritendinitis of the glenohumeral joint were included in the analysis, randomly divided into 2 groups of 38 patients each. Group A was treated with MLSA laser therapy, and group B with a combination of microwave diathermy and interference current therapy. Patients were followed up at three different points in time: before starting treatment, after completing the therapeutic course, and on day 45. The inclusion and exclusion criteria used in patient selection are clearly stated.

Appropriate methods have been chosen to objectify the results, which allow solving the set tasks. The Shoulder Pain and Disability Index (SPADI) and the visual analog scale (VAS) assessment of spontaneous and palpable pain were used to assess pain during follow-up. In order to objectify the functional state, angulation of the glenohumeral joint (flexion, abduction and external rotation) was performed. The organization of the study is comprehensively described, and the therapeutic approaches used are described and illustrated in detail.

Statistical methods for analysis and interpretation of experimental data are well selected, including descriptive and hypothesis testing methods.

Results and discussion

Outcomes included assessment of study patients' socio-demographic characteristics and baseline values of the six follow-up characteristics (age, sex, affected side, occupation, goniometry data, and pain intensity). Homogeneity of the studied groups was established, which is an important condition for the reliability of the results of the comparative analysis.

The results of the evaluation of the clinical effectiveness of the two methods of treatment at the three considered moments are presented.

Analysis of the baseline values of the six measures of treatment effectiveness in both groups at the three time points considered showed a statistically significant improvement at the end of treatment from baseline for patients in both groups. The comparison and analysis of the short-term and long-term clinical effectiveness of the two treatment methods according to the six indicators presented a statistically significant difference in favor of the LMS laser treatment.

In the discussion, the achieved results are summarized, comparing them with the literature data and relating them to the formulated hypotheses. A conclusion is drawn, shortcomings are pointed out, and directions for future research are given.

Five conclusions were formulated that summarize the results of the conducted research and fully meet the set goals and objectives.

Contributions and significance of the development for science and practice

The PhD student has indicated three theoretical-methodological and two practical-applied contributions. The better efficiency of the laser treatment compared to the combined complex of microwave diathermy and interference current was proven in the studied patients, and the improvement of the function was essential. Monotherapy with MLS laser represents a modern treatment option, it can be applied in the acute phase of the disease, it is more economical and time-saving. The obtained results in practical terms enable the specialists in

physical and rehabilitation medicine to prepare proven effective protocols for the treatment of peritendinitis of the glenohumeral joint.

Publications in connection with the dissertation

3 publications in scientific periodicals related to the topic have been provided, in which Dr. Panayotova is the first author. In a presentation at a national scientific forum, the medical community received information about the issues addressed in the dissertation work.

The Autoreferat meets the accepted requirements and accurately and systematically reflects the content of the development.

Critical notes

I have no comments or recommendations regarding the research conducted and the materials presented. The PhD student has independently carried out scientific research, organization and design of the study, creation of study instruments, implementation of the various tests, measurements and evaluations. The position of the PhD student is visible in the design of the dissertation, thanks to her professional experience.

IN CONCLUSION

Dr. Panayotova's PhD thesis concerns a current medical problem. It meets all the requirements for the structure, the qualitative and quantitative criteria based on the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Rules for its Application in the Faculty of Medicine - Varna. Demonstrates in-depth theoretical knowledge in the field of physical and rehabilitation medicine and ability to conduct independent scientific research. The set goal has been achieved, the tasks have been completed, the contributions have been made.

On the basis of the above, I confidently give my **POSITIVE** assessment of the conducted study and propose to the respected members of the Scientific Jury to award the educational and scientific degree "**DOCTOR**" to **Dr. Lilia Peycheva Panayotova-Ovcharova** in the scientific specialty "Physiotherapy, Talasotherapy and rehabilitation", professionally direction 7.1. Medicine.

15. 08. 2022

Sofia

Prepared:



(Assoc. Prof. Iskra Takeva, MD, PhD)