

REVIEW

By Assoc. Prof. Antoaneta Stefanova Grozeva, MD, PhD

Scientific specialty "Physical and rehabilitation medicine"

Lecturer at the Faculty of Public Health and Health Care and

Director of the Medical College at

University "Prof. Dr. Asen Zlatarov" - Burgas,

of 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 of Dr. Lilia Peycheva

Panayotova-Ovcharova - full-time PhD student

Topic "*Comparative study of the effects of a conventional physiotherapeutic complex and high-energy laser on patients with peritendinitis of the glenohumeral joint* with thesis supervisor *Assoc Prof Dr Iliya Todorov Todorov, MD.*

1. Award procedure

I present a statement as an external member of the examination committee and review of the PhD thesis of Dr. Lilia Peycheva Panayotova-Ovcharova 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.

This review was developed and presented in accordance with the requirements of the Law on the Development of the Academic Staff of the Republic of Bulgaria /LDASRB/, the Regulations for the Implementation of the LDASRB and the Regulations on the Development of the Academic Staff at the Medical University /MU/ - Varna.

2. Biographical data and career development

Dr Liliya Peycheva Panayotova-Ovcharova 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.

Her professional career began at OCPOMC-GP Prima Medica Ltd, Varna as a doctor's surgery assistant in 2010 and a year later as a doctor. Dr Liliya Peycheva Panayotova-Ovcharova was appointed as resident medical officer at UMPHAT Sveta Marina Varna EAD in 2017. In the same year she was appointed assistant and administrative assistant to the Management Board for Thalassotherapy, Physiotherapy and Rehabilitation at the Department of Physiotherapy, Rehabilitation, Thalassotherapy and Occupational Diseases of MU Varna.

Dr Liliya Peycheva Panayotova-Ovcharova has participated in a number of qualification courses for postgraduate training: laser therapy, fundamentals of Eastern medicine and acupuncture, trigger point therapy, Cyriax orthopedic medicine, etc, which have helped her scientific development. She has a good command of written and spoken English, German and Russian.

Dr Liliya Peycheva Panayotova-Ovcharova is a member of the Bulgarian Medical Association, the Bulgarian Society of Manual Medicine and the Association of Physical and Rehabilitation Medicine.

3. General presentation of the procedure and the PhD student

The presented set of materials on paper and electronic media is complete within the statutory period in accordance with the requirements of the Law on the Development of the Academic Staff of the Republic of Bulgaria /LDASRB/, the Regulations for the

Implementation of the LDASRB and the Regulations on the Development of the Academic Staff at the Medical University /MU/ - Varna.

4. Notes and comments on the documents

The thesis of Dr Liliya Peycheva Panayotova-Ovcharova is submitted in 151 standard pages in eleven sections with an adequate ratio, illustrated with 33 figures, 24 tables and 15 appendices. The structure complies with the requirements set out in the Regulations to the Academic Staff Development of MU-Varna. The thesis has the following structure: "Introduction" – 2 pages, "Literature review" – 40 pages, "Research goals and objectives" – 2 pages, "Materials and methods" – 10 pages, "Results" – 32 pages, "Discussion" – 12 pages, "Conclusion"- 3 pages, "Inferences" – 2 pages, "Scientific research contributions" – 1 page, "Scientific publications and communications related to the thesis" – 1 page.

The presented bibliography consists of 272 sources, of which 26 in Cyrillic and 246 in Latin. About 50% of the citations are from the last ten years, 25% of them from the last five years.

The thesis was approved by the departmental council of the "Department of Physiotherapy, Rehabilitation, Talasotherapy and Occupational Diseases" at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna with Protocol No. 4/18.05.2022.

5. Significance and relevance of the topic

The topic of the dissertation is relevant and relevant for practice, as it concerns an extremely common problem, namely shoulder injury. Peritendinitis of the glenohumeral joint is among the most common pathologies of the shoulder. The problem affects people of both sexes in active age. This worsens the patients' quality of life, requires prolonged treatment and is associated with significant socio-economic costs. Regardless of the continuous improvement of diagnostic and therapeutic methods, the problems of these patients have not yet been solved to a satisfactory degree, which necessitates the study of the possibilities of new methods of physical medicine to improve the quality of life. In the acute phase of glenohumeral peritendinitis, many of the traditionally used physical factors do not give satisfactory and lasting results. Multiwave Locked System (MLS) lasers have a direct impact

on disease pathogenesis, inflammation and reduce pain and can be used at the earliest stage. There are many reports of follow-up treatment of glenohumeral peritendinitis with microwave diathermy and interference current as monotherapy and in combination with other physical factors and kinesitherapy.

6. Degree of knowledge of the problem and creative interpretation of the literature review.

The literature review presented in the dissertation is detailed and has nine sections in a logical sequence. Dr. Liliya Peycheva Panayotova-Ovcharova concretely and analytically presents the most important highlights published in the literature in connection with the disease peritendinitis of the glenohumeral joint. Anatomy and kinematics of the shoulder complex, as well as pathogenesis and pathokinesiology of the disease are discussed. The etiology, clinical picture and differential diagnosis of the disease are reviewed. The most current research methods, therapeutic behavior, and methods of physical and rehabilitation medicine are sequentially reviewed. The need for new, more in-depth studies to optimize the treatment and rehabilitation of peritendinitis of the glenohumeral joint is highlighted.

7. Aim, tasks and hypotheses

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

To achieve this goal, five tasks were set and three hypotheses were formed, which also correspond to the goal in a logical sequence.

8. Clinical contingent and methodology

This is a prospective, randomized, parallel study and was conducted in the period from 26.11.2020 to 31.10.2021 in the Clinic for Physical and Rehabilitation Medicine of UMBAL "St. Marina" - Varna and the Department of Rehabilitation, located on the territory of the hotel "Estreya Residence" in the resort complex "St. st konstantin and Elena".

A total of 76 patients with glenohumeral peritendinitis who met specific inclusion and exclusion criteria were included in the study. Patients were randomly assigned by a software platform into 2 groups of 38 patients each. When calculating the sample size (sample size), the minimum number of patients was determined for statistical reliability of the results. Patients were followed up at three different time points: before starting treatment, after completing the therapeutic course and on day 45.

Dr. Lilia Peycheva Panayotova-Ovcharova made a detailed description of the clinical contingent. A number of objectifying tests have been used. The Shoulder Pain and Disability Index (SPADI) and the assessment of spontaneous and palpable pain with the visual analog scale (VAS) 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.

After researching and analyzing the available data on treatment methods for peritendinitis of the glenohumeral joint, Dr. Liliya Peycheva Panayotova-Ovcharova applied two treatment methods in children groups of patients. One group was treated with Multiwave Locked System (MLS) laser therapy – group A, while the other with a combination of microwave diathermy and interference current therapy – group B.

The selected statistical methods provide a complete and reliable assessment of the data, in accordance with the purpose of the presented study.

9. Main results and contributions

The results are described on 32 pages. They are well illustrated with figures and tables. Outcomes included assessment of the socio-demographic characteristics of the study patients and the baseline values of the six follow-up characteristics (age, gender, country of origin, occupation, goniometry data and pain intensity).

There is a statistically significant effect in both therapeutic methods used. The comparative analysis of the results between the two methods proves the superiority of MLS laser treatment in glenohumeral peritendinitis.

The discussion is thorough and well systematized. The conclusions drawn from the results of the study correspond to those set in the dissertation work. In conclusion, the most important results of the study are summarized.

The dissertation concludes with three theoretical-methodological and two practical-applied contributions.

10. Abstract

The thesis abstract is structured according to the requirements, its content complies with the thesis, 21 tables and 30 figures are presented to illustrate the results obtained from the scientific research.

11. Publications related to the dissertation work and participation in scientific forums

In connection with the dissertation, 3 full-text publications were made. Dr. Lilia Peycheva Panayotova-Ovcharova presented with a report part of the results in connection with the dissertation work at the National Conference on Physical and Rehabilitation Medicine.

12. Conclusion

The PhD thesis of Dr. Lilia Peycheva Panayotova Ovcharova contains significant and original results, which are adequately presented in contributions of a scientific-theoretical and scientific-practical nature and fully meets the requirements for awarding the educational and scientific degree of doctor.

All this gives me the reason to give a POSITIVE evaluation and to propose to the members of the Scientific Jury to award Dr. Lilia Peycheva Panayotova-Ovcharova the scientific and educational degree "DOCTOR".

22. 08. 2022

Burgas

Prepared:

(Assoc. Prof. Antoaneta Grozeva, MD, PhD)