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شبكة المعلومات الجامعية
التوثيق الالكتروني والميكروفيلم



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جامعة عين شمس

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**EFFECT OF LOW LEVEL LASER
THERAPY AND AEROBIC EXERCISE
TRAINING IN THE TREATMENT OF
CHRONIC PELVIC INFLAMMATORY
DISEASE**

Thesis
Submitted for Partial Fulfillment of the
Requirements for Master Degree in
Physical Therapy

By

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(2007)

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Contents

Chapter I	Page
Introduction	1
Aim of the work.....	3
Chapter II	
Review of literature	
Pelvic inflammatory disease (PID).....	4
Epidemiology of PID.....	4
Etiology of PID.....	8
Pathogenesis of PID	8
Signs and symptoms of PID.....	10
Sequelae of PID.....	10
Diagnosis of PID.....	11
Treatment of PID.....	13
Immune system	19
Laser therapy.....	21
Physics of laser	21
Properties of laser light	22
Types of laser.....	24
Laser tissue interaction	25
Effects of laser on pain and inflammation	27
Laser for treating PID	29
Aerobic exercise.....	31
Benefits of aerobic exercise.....	32
Effect of exercise on pain and inflammation.....	33
Chapter III	
Subjects, Materials and Methods.....	36
Chapter IV	
Analysis of results.....	53
Chapter V	
Discussion.....	62
Chapter VI	
Summary and Conclusion.....	67
Recommendations	69
References.....	70
Appendices.....	87
Arabic Summary	

Eman Abd El Ftah Mohamed

EFA Efficacy of low level laser and aerobic exercise in the treatment of chronic pelvic inflammatory disease / Eman Abd El Ftah Mohamed; Supervisors: Dr. Amel Mohamed Yousef, Dr. Mohamed Mostafa Shahin, Dr. Hala Mohamed Hanafy - Cairo University- Faculty of Physical Therapy-Physical Therapy Department for Gynecology and Obstetrics -Year 2007- Around 92 pages, Master Thesis.

Abstract

This study was conducted to determine the effect of low level laser therapy (LLLT) and aerobic exercises training in the treatment of chronic pelvic inflammatory disease (PID). Thirty regularly menstruating patients diagnosed as having chronic PID participated in this study. They were treated with LLLT and aerobic exercises training program which consisted of weight bearing exercise on treadmill followed by specific exercises for hip extensor and abductor muscles as well as posterior pelvic tilting exercise for 18 sessions, 3 sessions per week. All patients were evaluated before and after the end of the treatment using present pain intensity (PPi) scale as well as C- reactive protein (CRP) and pain relief (PR) scale which evaluated only after the end of the treatment. The results of this study showed a statistically highly significant decrease ($P < 0.001$) in the intensity of PID pain perception and CRP after the end of the treatment program. Accordingly, it can be concluded that LLLT and aerobic exercises are effective physical therapy modality for treating chronic PID.

Key words: *PID, Pain, LLLT, Aerobic exercises, CRP.*



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Acknowledgement

Acknowledgement

Above all and before all thanks to ALLAH

I Would like to express my deepest thanks and gratitude to Prof. **Dr. Amel Mohamed Yousef**, Prof. and Chairman of Physical Therapy Department for Gynecology and Obstetrics, Faculty of Physical Therapy, Cairo University, for her kind supervision, valuable instructions, stimulating suggestion, keep encouragement, assistance and co-operation in bringing this work to light as well as for her sisterly feeling during the preparation of this study.

I would like to express my respect and appreciation to **Dr. Mohamed Mostafa Shahin**, Assistant Professor of Gynecology and Obstetrics, El-Sahel Teaching Hospital, for his kindly accepting to supervise this work and constant help in offering all the facilities in his department for my work.

I wish to express my heartily gratitude to **Dr. Hala Mohamed Hanafy**, Lecturer of Physical Therapy for Gynecology and Obstetrics, Faculty of Physical Therapy, Cairo University, for her continuous guidance, encouragement, assistance, kind and reliable advice she gave in this work.

Finally, many thanks to all the patients who participate in this study and also to all membership at El-Sahel Teaching Hospital for their gratifying help.

List of abbreviations

Abbreviation	Interpretation
ATP	Adenosine triphosphate
BMI	Body mass index
CO ₂	Carbon dioxide
Cm(s)	Centimeter(s)
CRP	C - reactive protein
DNA	Deoxy ribonucleic acid
ESR	Erythrocyte sedimentation rate
Fig.	Figure
Ig	Immunoglobulin
IL-6	Interleukin -6
IUCD	Intrauterine contraceptive device
Kg(s)	Kilogram(s)
Kg/m ²	Kilogram per meter square
LLLT	Low level laser therapy
L	Lumbar
MRI	Magnetic resonance image
Mg/dl	Milligram/Deciliter
Mm	Millimeter

List of abbreviations

Nm	Nanometer
Ns	Nanoseconds
NK	Natural killer
NSAIDs	Non steroidal anti -inflammatory drugs
No.	Number
PR	Pain relief
PID	Pelvic inflammatory disease
PPI	Present pain intensity
P	Probability
PG	Prostaglandin
S	Sacrum
SAA	Serum amyloid-A
STDs	Sexually transmitted diseases
SD	Standard deviation
TNF	Tumor necrosis factor
W/Cm ²	Watt per centimeter square
WBCs	White blood corpuscles
Yrs	Years
<	Less than
>	More than

List of Tables

Table No.	Subject	Page
1-	Types of laser and their wavelength	24
2-	Statistical summary of ^{the} physical characteristics of all patients	54
3-	Percentage of PID pain intensity before starting the study and after the end of the 18 th treatment sessions	56
4-	Percentage of PR after the end of the 18 th treatment sessions	58
5-	Mean values of CRP before starting the study and after the end of 18 th treatment sessions	60