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بالرسالة صفحات لم ترد بالاصل

EFFECT OF ELECTROMAGNETIC THERAPY ON DIABETIC FOOT ULCER

By
Mohamed Ahmed Zaki Ismail Seoudi
B.Sc. in Physical Therapy.

A Thesis
Submitted in Partial Fulfillment for the Requirement of the Master Degree in Physical Therapy.

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Faculty of Physical Therapy
Cairo University

2007

بسم الله الرحمن الرحيم

ربي إشرح لي صدري

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ويسر لي أمري

سورة طه-الأية رقم (25 , 26)

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ACKNOWLEDGMENT

First of all, I would like to kneel thanking for **My LORD**, who provided me with all power and patience for completion of this work.

I would like to thank **Prof. Dr. Aly El M. Ashmaui,** Professor of Internal Medicine, Faculty of Medicine, Cairo University, for his great support and advice as he gave me the confidence and encouragement to start and complete this study as the best as I could do.

I also wish to express my deepest gratitude and gratefulness to **Prof. Dr. Zinab M. Helmy,** Professor of Physical Therapy for Cardiopulmonary Disorders and Geriatrics, Faculty of Physical Therapy, Cairo University, for her great support and, her sincere supervision, valuable advice, constructive criticism and continuous support.

I also thank all the stuff members of the Diabetes Clinic in Kasr Al-Aini for their effort with me.

I cannot forget to thank all the members and out patients clinic of Faculty of Physical Therapy for giving me their time and effort voluntarily.

Last but not least, special thanks to all patients who participated in this study.

Dedication

This work is dedicated to my Family.

Effect Of Electromagnetic Therapy On Diabetic Foot Ulcer/ Mohamed Ahmed Zaki Seoudi; supervisors; **Prof. Dr. Zinab M. Helmy** ; Professor of Physical Therapy Department for Cardiopulmonary Disorders and Geriatrics, Faculty of Physical Therapy, Cairo University, **Prof. Dr. Aly El M. Ashmaui** Professor of Internal Medicine, Faculty of Medicine, Cairo University, 2006 (Master Thesis) .

ABSTRACT

The purpose of this study is to examine the effect of low frequency pulsed magnetic field (LFPMF) therapy on diabetic foot ulcer in patients with type 2 diabetes mellitus. Twenty patients from Out Patient Clinic of Diabetes in Kasr Al-Aini Hospital were assigned randomly into 2 groups equal in number. The magnet on group (n=10) received LFPMFin addition to oral hypoglycemic drugs, whereas the magnet off group (n=10) received hypoglycemic drugs. The blood perfusion, heart rate, respiratory rate and blood pressure were measured before and after 3 month of treatment. Ankle brachial pressure index (ABPI) was measured before the study to exclude macrovascular complications. **Results:** The results showed a statistical non significant improvement in all parameters in magnet on group compared with magnet off group. **Conclusion:** It was concluded that LFPMF is not effective as a therapeutic method to improve healing of diabetic foot ulcer in patients with type 2 diabetes mellitus.

Key words: Magnetic Field, Blood Flow, Diabetic Patients

CONTENTS

LIST OF ABBREVIATIONS

ABPI	Ankle brachial pressure index.
AGD	Antiglutamate decarboxylase.
AGEs	Advanced glycosylation end products.
A/M	Amperes per meter.
B	Magnetic flux density.
C	Velocity of light.
CAD	Coronary artery disease.
CBM	Capillary basement membrane.
CHD	Coronary heart disease.
DC	Direct current.
DM	Diabetes mellitus.
EF	Electric field.
ELF	Extremely low frequency.
EMF	Electromagnetic field.
F	Frequency.
FFAs	Free fatty acids.
FPG	Fasting plasma glucose.
g	Gram.
G	Gauss.
GDM	Gestational diabetes mellitus.
H	Magnetic field strength.
HDL	High density lipoproteins.
Hz	Hertz.
HR	Heart Rate.
HRV	Heart rate variability.
Ibs	Bounds.
IDDM	Insulin dependent diabetes mellitus.
IGT	Impaired glucose tolerance.
IR	Infra-red.
K+	Potassium Ion.
LDF	Laser Doppler Flowmetry.
LDL	Low-density Lipoproteins.
LDP	Laser Doppler perfusion.
LDPM	Laser Doppler perfusion measurement.
LFMF	Low frequency magnetic field.
MC	Micro wave.
Mg/dl	Milligram percent.

mmHg	Millimeter mercury.
mT	Millie tesla.
Na^+	Sodium Ion.
NIDDM	Non-insulin –dependent diabetes mellitus.
PEMF	Pulsed electromagnetic field.
SD	Standard deviation
SI	System international.
SW	Short wave
T	Tesla.
TENS	Transcutaneous electrical nerve stimulation.
UV	Ultraviolet.
VL	Visible light.
V/M	Volts per meter.
WHO	World Health Organization.