EFFECT OF SENSORY MOTOR TRAINING AND ELECTRICAL RUSSIAN CURRENT ON KNEE OSTEO-ARTHRITIC PATIENTS

By

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B.Sc., in Physical Therapy, Cairo University, 2006

Thesis

Submitted to Basic science department for the Requirement of Master Degree in Physical therapy,

Faculty of physical therapy
Cairo University
2010

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Effect of Sensory motor training and Electrical Russian current on osteoarthritic patients. Emad Eldin Mohamed Abd Elateif ; **Supervisors**: Prof. Dr. Amal Fawzy Ahmed , Cairo University, Faculty of Physical Therapy, Department of Basic science, Prof. Dr. Alaa ELdin Abd Elhakeem Balba, Cairo University, Faculty of physical Therapy, Department of Musculoskeletal disorders and its surgery, Prof Dr. Ahmed labib Mohamed , kasr Eleine, faculty of medicine, 2009. Master Thesis.

ABSTRACT

The purpose: of study was to investigate effect of sensory motor training and electrical Russian current on knee osteoarthritic patients. **Subjects:** Sixty patients from both sexes were assigned into four equal groups with age range from 30-50 years. **Methods:** Measuring muscle torque, proprioceptive acuity, pain level, and functional activities were performed before and after treatment. Group A received traditional exercise program .Group B received the same program in addition to Russian current stimulation. Group C the same program plus sensory motor training. Group D received sensory motor training and electrical Russian current plus traditional exercise program three times per week for eighteen sessions. **Results:** The results revealed that there was a significant improvement in all measured parameters with the highest results in group D ($p<0.05$). **Conclusion:** Sensory motor training and electrical Russian current plus traditional exercise program is effective method in treatment of osteoarthritis.

Key word: Sensory motor system, Russian current, Osteoarthritis.

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Contents

Methods, Materials, Subjects (Chapter III)

List of abbreviation

AC	Alternate current
ACL	Anterior cruciate ligament
ADL	Activity of daily living
AGEs	Advanced glycation end products
AJP	Active joint position
AMF	Amplitude modulated- frequency
ANOVA	Analysis of variance
CL	Cruciate Ligament
CM	Centimeter
CNS	Central nervous system
CVA	Cerebrovascular accident
DC	Dorsal columns
DLF	Dorsolateral funiculus
ECM	Extracellular matrix
EIT	Electrical induced torque
ES	Electrical stimulation
GTOs	Golgi tendon organ
HZ	Hertz
IFC	Interferential current
IP	Interphalangeal
KHZ	kilohertz
KS	Keratan sulfate
LCN	Lateral cervical nucleus

MEIT	Maximum Electrical induced torque
MS	Millisecond
MT	Muscle torque
MVIC	Maximum voluntary isometric contraction
NMES	Neuromuscular electrical stimulation
NSANDs	Non steroidal anti-inflamatory drugs
OA	Osteoarthritis
PA	Proprioceptive acuity
PC	Pulsed current
PCL	Posterior cureciate ligament
PNS	Peripheral nervous system
PT	Peak torque
RA	Rapidly Adapting
RCS	Russian Current Stimulation
ROM	Range of motion
SD	Standard Deviation
SDH	Succinate dehydrogenaze
SIJ	Sacroiliac joint
SL	Slowly Adapting
SMT	Sensory motor system
TENS	Transcutaneus Electrical nerve stimulation
TMJ	Tempomandibular joint
VPL	Ventral posterior lateral

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