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THE EFFECT OF MAGNETIC FIELD THERAPY IN PRIMARY KNEE OSTEOARTHRITIS

Thesis

Submitted in Partial Fulfillment of

Master Degree in

Physical Medicine and Rehabilitation

By

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2003

B17362

ACKNOWLEDGEMENT

First of all, thanks to ALLAH for helping me to achieve this work.

I am very grateful to Prof. Dr. Mohammed Ezz El-din Mwafy, Prof. & Head of Physical Medicine and Rehabilitation Department, Faculty of Medicine, Tanta University, for his unlimited help, meticulus scientific supervision and the sacrifice of his precious time for the sake of this work.

I would like to express my sincere gratitude and appreciation to Prof. Dr. Hamdy Ahmed Khallaf, Prof. of Physical Medicine and rehabilitation, Faculty of Medicine, Tanta University, for his valuable advice, precious guidance and unlimited encouragement throughout the entire work.

I would also like to express my deepest gratitude and appreciation to Dr. Elham Mohammed Kassem, Lecturer of Physical Medicine and Rehabilitation, Faculty of Medicine, Tanta University for giving me a greate deal of here time, guidance and assistance during the performance of this work.

Finally, I would like to thank every one who helped and supported me to complete this work.

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INTRODUCTION

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Osteoarthritis (OA) is the most prevalent form of arthritis [1] and its most common site is the knee joint. [2] [3] Joints affected by osteoarthritis are characterized by degradation and loss of articular cartilage. [2] [4] Cartilage loss is accompanied by hypertrophic changes in neighboring bone, appearing as sclerosis and osteophytes. The major symptoms of osteoarthritis, which occur in 25 to 50% of persons with radiographic evidence of the disease, are joint pain and stiffness. [5] [6] The joint damage and chronic pain from osteoarthritis lead to muscle atrophy, decreased joint range of motion, instability, and, ultimately, to physical disability. [2] [8] Indeed, the high prevalence, long duration, pain, and limited efficacy of therapeutic drugs make osteoarthritis one of the most frequent causes of physical disability in older adults [2]

The treatment of OA is focused on managing the condition by minimizing morbidity.[10] Current recommendations for the management of OA, including guidelines published by the American College of Rheumatology, focus on the relief of pain and stiffness and maintenance or improvement in functional status and quality of life as important goals of therapy.[10] Many pharmachologic therapies for knee OA can be associated with significant adverse effects; [11] [12] Non-pharmachologic physical modalities that have been shown to be effective in patients with knee OA include patient education, physical and occupational therapy, and therapeutic exercises.[10] [13]

Recently, attention has been paid to Pulsed Electromagnetic Field (PEMF) as a new physical modality. The application of PEMF for osteoarthritis is a relatively new treatment, which has been supported by several trials in relieving pain of musculoskeletal system, thus PEMF would

be expected to decrease pain and improve range of motion and degree of disability.[14] [15]

AIM OF WORK

AIM OF THE WORK

The aim of this study is to evaluate the effect of Pulsed Magnetic Field in treating knee osteoarthritis. The judgement will be done by clinical and functional assessments.

REVIEW OF LITERATURE

OSTEOARTHRITIS

Definition: Osteoarthritis (OA) is a heterogenous group of conditions that lead to joint symptoms and signs which are associated with defective integrity of articular cartilage in addition to related changes in the underlying bone and the joint margins. [16]

OA is a chronic disorder characterised by softening and disintegration of articular cartilage, with reactive phenomena such as vascular congestion and osteoblastic activity in the subarticular bone, new growth of cartilage and bone (i.e.osteophytes) at the joint margins, and capsular fibrosis. Although there are sometimes signs of inflammation, it is not primarily an inflammatory disorder. These features are sufficient to accept (OA) as a specific entity. It is more process than disease, however, occurring in almost any condition that causes a disparity between the mechanical stress applied to articular cartilage and the ability of the cartilage to withstand that stress. [17]

OA is the result of both mechanical and biologic events that destabilize the normal coupling of degeneration and synthesis of articular cartilage and sub-chondral bone although it may be initiated by multiple factors including genetic, developmental, metabolic and traumatic. [18]

Classification of OA :

Classification of osteoarthritis is difficult because of its variable presentation .The American College of Rheumatology (ACR) [19] classified OA simply into:

Primary (idiopathic) OA: when it occurs in the absence of any known underlying predisposing factor.