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بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

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DEGENERATIVE KNEE ARTHRITIS IN DIABETIC PATIENTS

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By

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Index of abbreviations

AP	: Antro-posterior
BMI	: Body mass index
CT	: Computerized topography
DSPN	: Distal symmetric peripheral neuropathy
GH	: Growth hormone
IGF-1	: Insulin like growth factor-1
IL-1	: Inter leukin-1
JSN	: Joint space narrowing
JSW	: Joint space width
MRI	: Magnetic resonant image
MTP	: Medial tibial plateau
NCV	: Nerve conduction velocity
NIDDM	: Non insulin dependant diabetes mellitus
OA	: Osteoarthritis
TFJ	: Tibio-femoral joint
TNFά	: Tumor necrosis factor ά
PFJ	: Patello-femoral joint
PND	: Peripheral nerve dysfunction
VAS	: Visual analogue scale

CONTENTS

Chapter

INTRODUCTION

INTRODUCTION

Osteoarthritis is a well–known disease that is part of the aging process and also one of the most common diseases among mammals. Although this musculo-skeletal disorder has been described in mammals of many ages, having been reported in Egyptian mummies and in dinosaurs. [1]

Osteoarthritis (OA) is a degenerative disorder of joints, characterized by deterioration of the articulating joint surface. Eventually OA also leads to changes in the subchondral bone. In articular cartilage, collagen network is the key structure that supports the three dimensional architecture of the tissue. [2]

OA is common disease associated with significant morbidity. [3-5] This is particularly apparent at the knee joint one of the commonest sites to be affected. [6]

Many factors have been reported to affect the incidence and progression of knee OA. Examples are sex [7], age [7], obesity [8,9], knee injury [9], and occupational physical activity. [10,11]

Clinically, patients with OA of the knee have pain in and around the knee that is typically worse with weight-bearing and improved with rest, morning stiffness, and on physical examination, often have tenderness to palpation, bony enlargement, crepitus on motion, and/or limitation of joint motion. [12,13]

The cardinal symptom of OA is pain, which at first occurs after joint use and is relieved by rest. The pain is usually aching in character and is poorly localized.

As the disease progresses, pain may occur with minimal motion or even at rest. In advanced cases, pain may awaken the patient from sleep because of the loss of protective muscular joint splinting, which during the waking hours limits painful motion.[14-17]

OA is multifactorial disease with a focal loss of articular cartilage with variable underlying bone reaction. [18] These lesions have a varying relation to radiographic finding (osteophytes, joint space narrowing, bone loss, subchondral cysts) and clinical symptoms (articular pain and loss function).[19]

Frequently, little or no correlation exists between the joint symptoms and the extent or degree of pathologic or radiological changes. Only about 30% of persons with roentgenographic evidence of OA complained of pain at the relevant sites.[20] However recent reports suggested that there could be a significant association between the joint space narrowing and pain severity in-patients with knee OA. [21]

Diabetes has been consistently reported as one of the strongest correlates of the presence of poor lower extremity performance or mobility difficulty.[22-24]

Older patients with diabetes are at high risk for loss of independence [24,25]. This is not surprising because a number of factors involved in the disablement process in older people, including cardiovascular diseases, peripheral neuropathy, overweight, osteoarthritis, visual deficit, and cognitive impairment, are more prevalent in diabetic patients.[24,26]

Diabetes may affect the musculoskeletal system in a variety of ways. The metabolic perturbations in diabetes (including glycosylation of proteins; microvascular abnormalities with damage to blood vessels and nerves and collagen accumulation in skin and peri-articular structures) result in changes in the connective tissue. [27]

Diabetes is not clearly a risk factor for OA. However obesity is a risk factor for both conditions. Several studies have reported an association of early OA and diabetes, both large and small joint OA have been reported to be increased in type 2 diabetes. [27]

Others have suggested that non-insulin dependent diabetes mellitus NIDDM (type 2) might be a potentially important risk factor for knee and hip OA. [28]

But other studies have reported that there is impaired osteophyte formation in the osteoarthritic knee of patients with type 2 diabetes. [29]

However, OA of the weight-bearing joints in the affected type 2 diabetic patients may be related to their obesity and not the diabetes itself. It is not yet known whether diabetes is a risk factor for OA independent of obesity. [27]

Thus, it seems that there is a need to study degenerative arthritis of the knees in the diabetic versus non-diabetic patients.

LITERATURE REVIEW