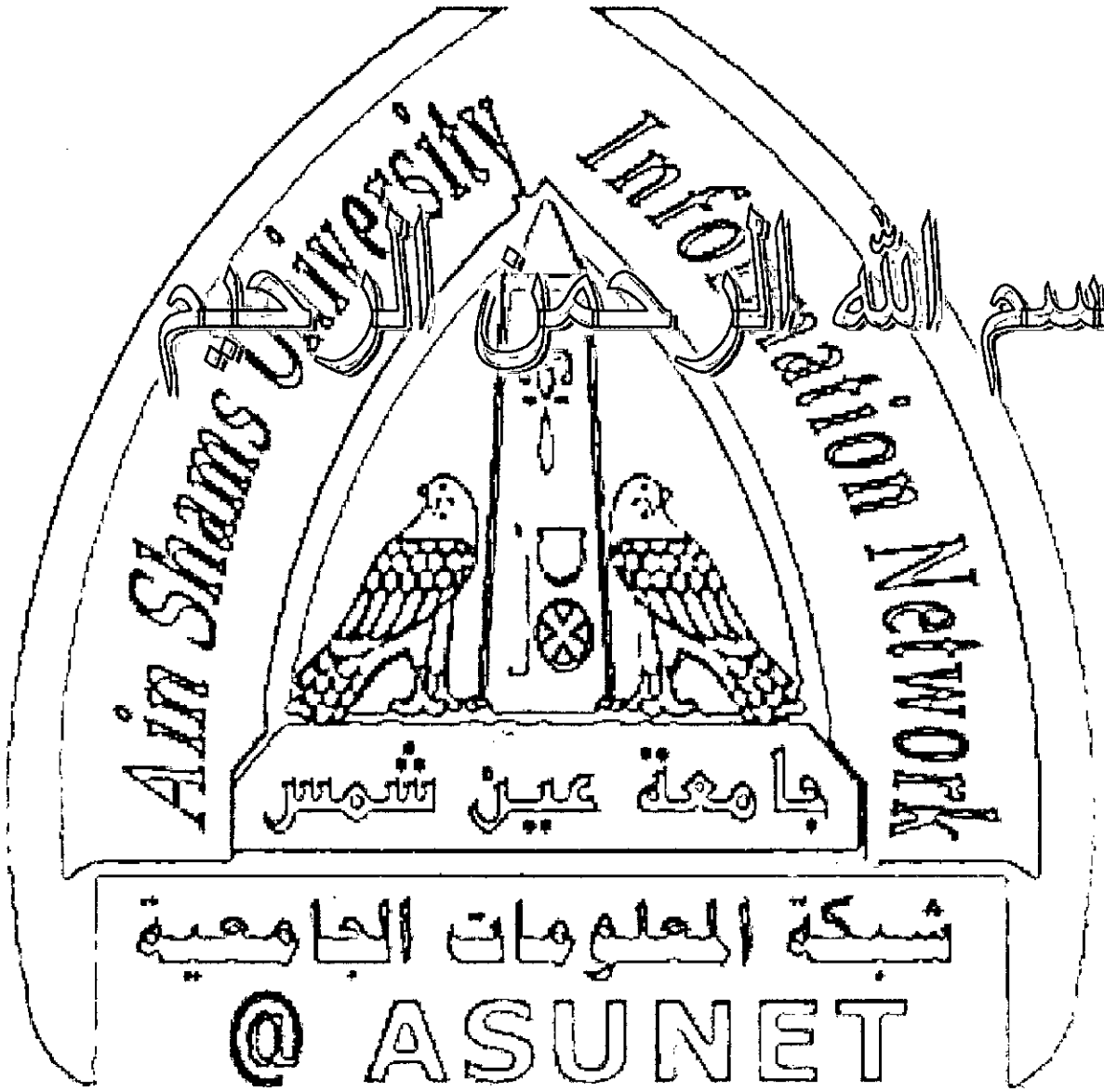
شبكة المعلومات الجامعية



شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد أعدت دون أية تغيرات

يجب أن

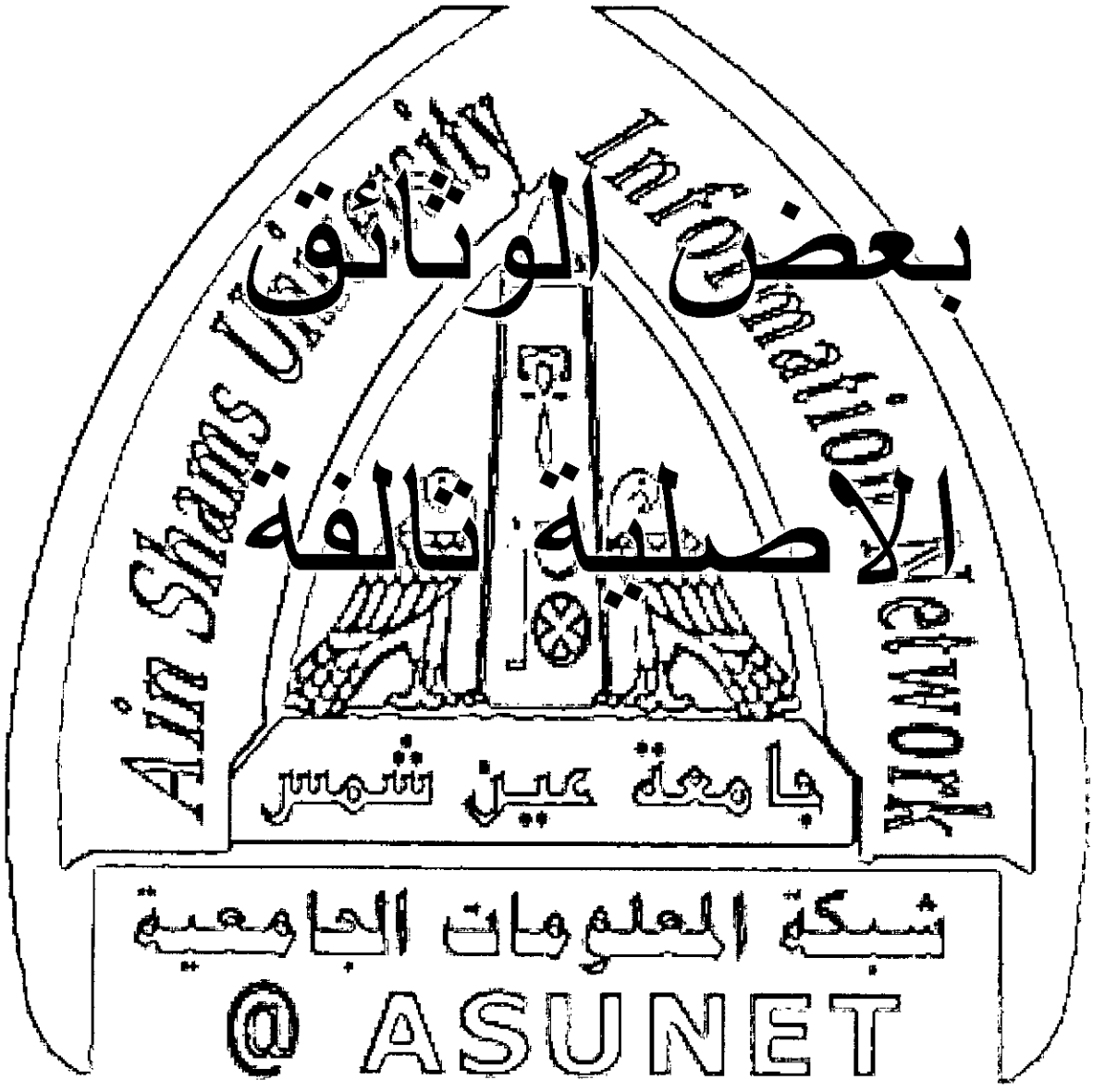
تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

To be Kept away from Dust in Dry Cool place of 15-25- c and relative humidity 20-40%

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم



بعض الوثائق الأصلية تالفة

RISK CATEGORIZATION OF DIABETIC FOOT PATIENTS IN TANTA UNIVERSITY HOSPITALS

Thesis

Submitted for Partial Fulfillment of the requirements of the Master degree

IN

Internal Medicine

By

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ABSTRACT

Introduction:

Foot complications are one of the most seriuos complications of diabetes mellitus. Diabetic foot lesions frequently result from two or more risk factors including diabetic neuropathy, peripheral vascular disease (PVD) in conjunction with minor trauma resulting in foot ulceration and may be amputation of a lower extremity.

Aim of the work:

To provide guidelines for prevention that will reduce the impact of diabetic foot disease and to evaluate the effectiveness of diabetic foot risk categorization to predict the clinical outcomes.

Subjects and methods:

This study was carried out on 200 diabetic patients. They were classified into 4 groups; 50 patients without diabetic neuropathy, 50 patients with diabetic neuropathy, 50 patients with neuorpathy and (PVD), 50 patients with a history of foot ulceration or amputation. The following were done for all subjects: full history taking, general and local exmination especially foot inspection, sensory exam. & vascular status and laboratory investigations including fasting & postprandial blood glucose, HbA_{1c}, blood urea, creatinine, cholesterol, urine for albuminuria, doppler ultrasonography, abdominal ultrasonography and ECG.

Results:

There was significant increase in patients of the higher risk groups who had longer duration of diabetes, worse glycemic control, vascular and neuropathic variables and more systemic complications of diabetes such as nephropathy and retinopathy.

Conclusion:

The foot risk classification of the international working group on the diabetic foot can predicts and prevents ulceration and amputation.

المستخلص العربي

تعتبر مضاعفات القدم من اهم مضاعفات مرض السكر. وغالبا القدم السكرية تنتج عن وجود داء العصاب السكرى و اعتلال الاوعية الدموية وفى بعض الاحيان يوجد خدش بسيط مما يؤدى الى حدوث قرح بالقدم السكرية وربما بتر احد الاطراف السفلية.

و قد اجري هذا البحث لدراسة تصنيف المضاعفات التى تحدث فى مرضى القدم السكرية و الذين تم تصنيفهم الى مجموعة مرضى بدون العصاب السكرى و مجموعة لديها داء العصاب و مجموعة لديها العصاب السكرى وايضا اعتلال الاوعية الدموية و مجموعة لديها تاريخ وجود قرح القدم السكرية او بتر باحد الاطراف السفلية.

ولقد خضع جميع المرضى للاتى: التاريخ المرضى والفحص الطبى الشامل وخاصة فحص القدم واختبارات ادراك الاحساس وكفاءة الدورة الدموية والابحاث المعملية وتشمل معدل السكر الصائم وبعد ساعتين والهيموجلوبين السكرى والبولينا والكرياتنين والكوليسترول والبروتينات فى البول وموجات فوق صوتية بالدوبلر على الساقين وموجات فوق صوتية على البطن ورسم القلب.

ولقد اظهرت هذه الدراسة انه كلما زادت مدة الاصابة بمرض السكر كلما زادت معدلات الاصابه بقرح القدم السكريه وايضا معدلات بتر الاطراف السفليه .

ومن هذه الدراسه نستخلص انه يجب ان نقوم باجراء اختبارات الفحص البسيطه دوريا فى جميع المستشفيات والمراكز المتخصصة لكى نكتشف مبكرا مضاعفات القدم السكرية وفقا لتصنيف مجموعات المرضى المختلفة .

ACKNOWLEDGEMENT

First of all, great thanks to **ALLAH,** the most merciful, the most gracious, real helper & real supporter of all

I would like to express my deepest appreciation and sincerest thanks to my ***Prof. Dr.Abdel Moteleb Taha Eissa,*** Professor of Internal Medicine, Faculty of medicine, Tanta university, for his creative suggestion, fruitful criticism, experienced guidance and continuous encouragement to complete this work. He continuously advised me and spared no time or effort to offer his help and skill that made the accomplishment of this work possible.

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LIST OF ABBREVIATIONS

GAD	: Glutamic acid decarboxylase.
IGT	: Impaired glucose tolerance.
IFG	: Impaired fasting glucose.
OGGT	: Oral glucose tolerance test.
ADA	: American diabetes association.
WHO	: World health organization.
MODY	: Maturity onset diabetes of the young.
IPF	: Insulin promoting factor.
HNF	: Hepatic nuclear factor.
HLA	: Human leucocyte antigen.
SUR	: Sulfonylurea receptor.
GDM	: Gestational diabetes mellitus.
DN	: Diabetic neuropathy.
VPT	: Vibration perception test.
DCCT	: Diabetes control and complication trial.
CAN	: Cardiovascular autonomic neuropathy.
HRV	: Heart rate variability.
BMI	: Body mass index.
ARI	: Aldose reductase inhibitor.
NOS	: Nitric oxide synthase.
GSH	: Glutathione.
AGEs	: Advanced glycation end products.
MGO	: Methylglycoxal.
DG	: Deoxyglucosone.
CML	: Carboxymethyl-lysine.
RAGE	: Receptor for AGE.
ROS	: Reactive oxygen species.
ET	: Endothelin.
NCV	: Nerve conduction velocity.
GERD	: Gastroesophageal reflux disease.
ABI	: Ankle brachial index.
PAD	: Peripheral arterial disease.
PVD	: Peripheral vascular disease.
HbA_{1c}	: Glycosylated hemoglobin.
SWMT	: Semmes Weinstein monofilament test.
DFD	: Diabetic foot disease.

Contents

INTRODUCTION

Diabetes is a serious chronic disease. In 2003 the global prevalence of diabetes was estimated at 194 million diabetic patients. This figure is predicted to reach 333 million by 2025 as a consequence of longer life expectancy, sedentary lifestyle and changing dietary patterns. This rise is likely to bring a proportional increase in the numbers of people with diabetic complications [(1)].

The diabetic foot complications are one of the most serious complications that can affect the diabetic patients. More than one million people with diabetes lose a leg every year as a consequence of their condition. This means that every thirty seconds a lower limb is lost due to diabetes somewhere in the world. The majority of these amputations are preceded by a foot ulcer. The most important factors related to the development of these ulcers are peripheral neuropathy, foot deformities, minor foot trauma and peripheral vascular disease.

It is possible to reduce amputation rates by between 49% and 85% through a care strategy that combines: prevention, the multi-disciplinary treatment of foot ulcers, appropriate organization, close monitoring and the education of people with diabetes and healthcare professionals. Healthcare decision-makers have a key role to play in removing the barriers to implementation that still exist in many countries. It is the ultimate goal of reduced amputation rates and improved quality of life that should motivate the advocacy work of those fighting to make a difference for those living with diabetes around the world[(2)].

REVIEW OF LITERATURE

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DIABETES MELLITUS

Definition :

Diabetes mellitus is a group of metabolic syndromes characterized by chronic hyperglycemia with disturbances of carbohydrate, fat, and protein metabolism resulting from defects in insulin secretion, insulin action, or both. The effects of diabetes mellitus include long-term damage, dysfunction, and failure of various organs, especially the eyes, kidneys, heart, and blood vessels. Diabetes may present with characteristic symptoms such as thirst, polyuria, blurring of vision, weight loss, and polyphagia, and in its most severe forms, with ketoacidosis or nonketotic hyperosmolarity which, in the absence of effective treatment leads to stupor, coma, and death[3].

Clinical stages of diabetes mellitus:

All subjects with diabetes can be classified according to clinical stage regardless of the underlying etiology of the diabetes. The stage of glycemia may change over time, depending on the extent of the underlying disease process. The disease process may be present but may not have progressed far enough to cause clinically identifiable abnormalities of glucose metabolism. For example, antibodies to islet cells, insulin, or glutamic acid decarboxylase (GAD) in a normoglycemic individual indicate a high likelihood for ultimate progression to type 1 diabetes[4].

Impaired glucose regulation refers to the metabolic stage intermediate between normal glucose homeostasis and diabetes that can be identified by

impaired glucose tolerance (IGT) or impaired fasting glucose (IFG)[5,6]. (IFG) and (IGT) are not synonymous and may represent different abnormalities of glucose regulation, although they may occur together. Individuals with either of these states of impaired glucose regulation have a high risk of progressing to diabetes [7, 8, 9]. (IGT) can be assessed only if oral glucose tolerance tests (OGTTs) are carried out, whereas IFG refers to fasting glucose concentrations that are lower than those required for the diagnosis of diabetes but higher than those usually found in subjects with normal glucose tolerance. Subjects with IGT or IFG usually have normal or slightly elevated levels of glycosylated hemoglobin[10].

Etiologic types of diabetes:

Because of the increasing number of forms of diabetes for which a specific etiology can be recognized, the current clinical classification, proposed by the American Diabetes Association (ADA) in 1997 [5] and adopted by the World Health Organization (WHO) in 1999 [6].

Etiologic classification of disorders of glycemia:

* **Type 1** (β-cell destruction, usually leading to absolute insulin deficiency).

  A- Autoimmune.

  B- Idiopathic.

* **Type 2** (may range from predominately insulin resistance with relative insulin deficiency to a predominately secretory defect with or without insulin resistance).

* **Other specific types**

  -Genetic defects of β-cell function.

-Genetic defects in insulin action.

-Diseases of the exocrine pancreas.

-Endocrinopathies.

-Drug or chemical induced.

-Infections.

-Uncommon forms of immune mediated diabetes.

-Other genetic syndromes sometimes associated with diabetes

* **Gestational diabetes**.