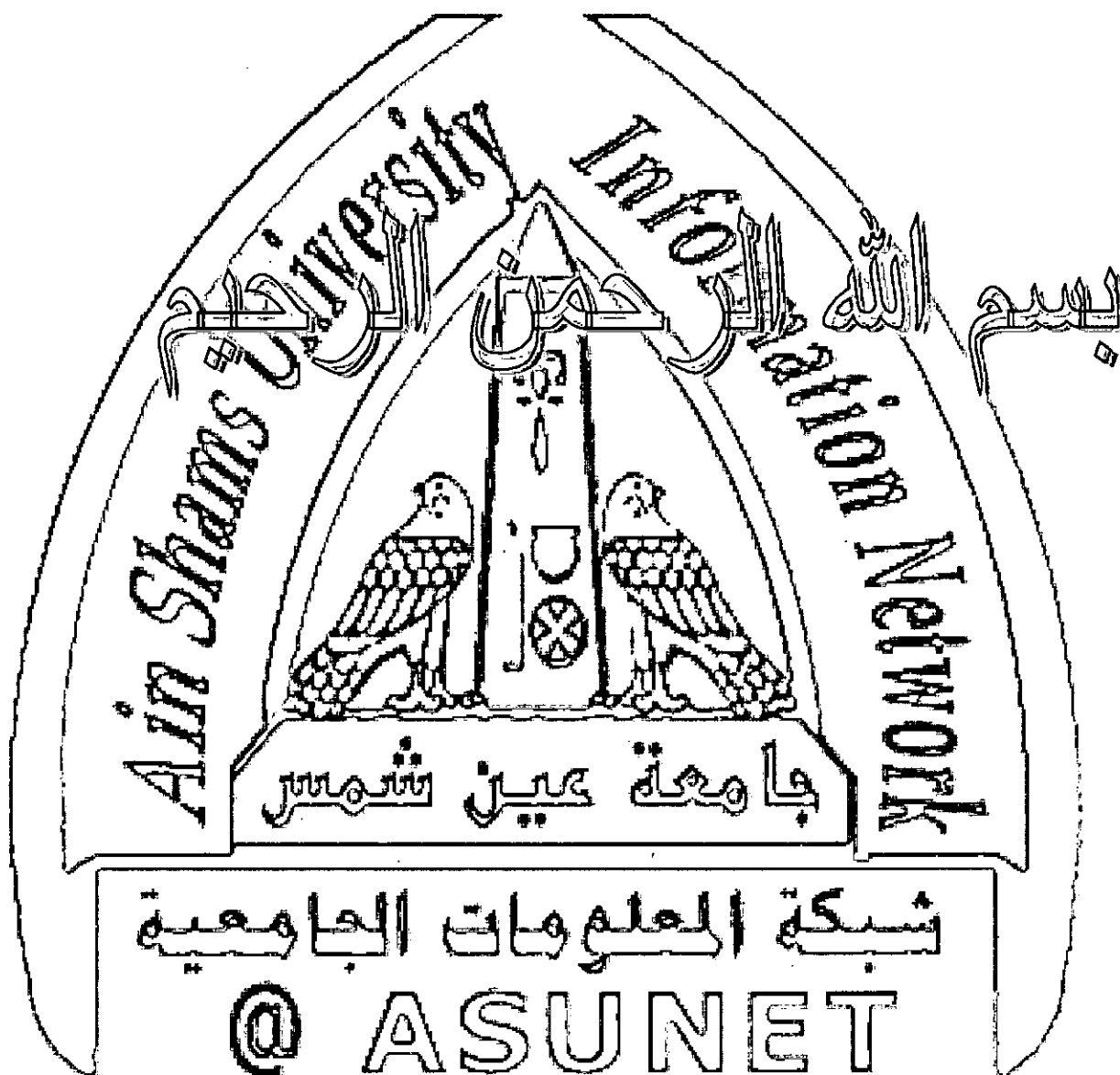




شبكة المعلومات الجامعية





شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

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شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم

بعض الوثائق الأصلية تالفة

ACUTE PHASE PROTEINS IN DIABETIC PATIENTS WITH AND WITHOUT MICROANGIOPATHY

THESIS

Submitted in Partial fulfillment for the Degree of M.D.

In
Internal medicine

By

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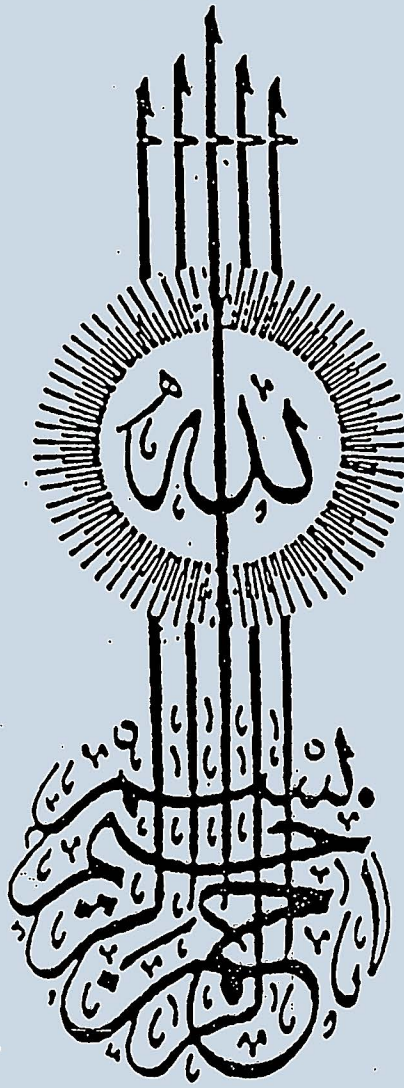
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TANTA UNIVERSITY**

1998



قَالُوا سُبْحَانَكَ

لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا
إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ

صَدَقَ اللَّهُ الْعَظِيمُ

(البقرة ٣٢)

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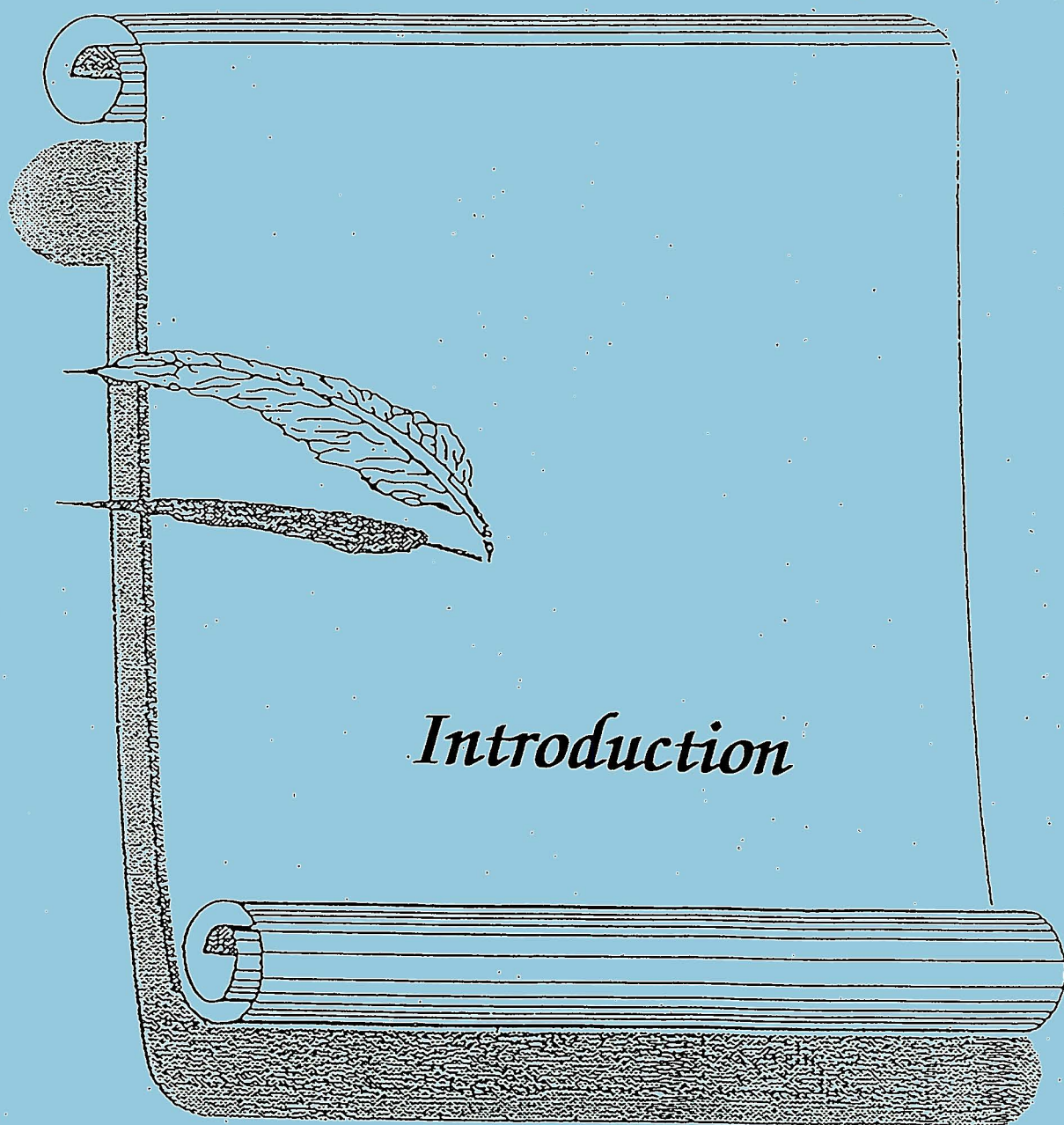
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Introduction

INTRODUCTION

It is well known that serum viscosity is increased in diabetes especially with evidence of microangiopathy sequelae. The increased serum viscosity explained by protein-composition changes with albumin depression .

The globulin elevation was dominated by increased level of serum globulins belonging to the "acute phase reactant" group produced by the liver. Increased production of these proteins is so common following injury and in both acute and chronic medical disorders that the terms "acute phase reactant" and "acute- phase proteins" have been introduced to identify them.

The major serum proteins of hepatic origin involved in the acute-phase reaction are α -1 acidglycoprotein (GP), α -1 antitrypsin, ceruloplasmin, haptoglobin, and C-reactive protein (CRP). Individual acute-phase protein levels have been found to be elevated in adult diabetes, but normal or nearly normal in childhood and adolescent diabetes, suggesting that their increase might be caused by developing microvascular disease rather than the early metabolic disorder in diabetes .

**REVIEW OF
LITERATURE**

REVIEW OF LITERATURE

DEFINITION OF DIABETES MELLITUS

Diabetes mellitus is a syndrome characterized by chronic hyperglycemia and disturbances of carbohydrate, fat and protein metabolism associated with absolute or relative deficiencies in insulin secretion and/or insulin action. When fully expressed, diabetes is characterized by fasting hyperglycemia, but the disease can also be recognized during less overt stages and before fasting hyperglycemia appears, most usually by the presence of glucose intolerance. Diabetes mellitus may be suspected or recognized clinically by the presence of characteristic symptoms such as excessive thirst, polyuria, pruritus, otherwise unexplained weight loss, or one or more of the many complications associated with or attributable to the disease⁽¹⁾.

Classification of Diabetes Mellitus and Allied Categories of Glucose Intolerance :

The most widely accepted classification of diabetes mellitus is the world health organization (WHO) classification of diabetes⁽²⁾. This classification was first adopted by WHO in 1980 and modified in 1985⁽³⁾.

WHO Classification of Diabetes Mellitus and Allied Categories of Glucose Intolerance

A- Clinical Classes

Diabetes mellitus

- Insulin-dependent diabetes mellitus

-Non -insulin dependent diabetes mellitus

a) Non -obese. b) Obese

- Malnutrition-related diabetes mellitus.

- Other types of diabetes associated with certain conditions and syndromes :

- 1) Pancreatic diseases, 2) disease of hormonal etiology , 3) drug or chemical induced conditions, 4) abnormalities of insulin or its receptors , 5) certain genetic syndromes, 6) miscellaneous.

Impaired glucose tolerance

a) Non - obese.

b) Obese.

c) Associated with certain conditions and syndromes.

Gestational diabetes mellitus

B- Statistical Risk Classes (normal glucose tolerance but substantially increased risk of developing diabetes).

- 1) Previous abnormality of glucose tolerance.
- 2) potential abnormality of glucose tolerance.

A- Clinical Classes.

The WHO system of classification contains three major clinical classes: *diabetes mellitus*, *impaired glucose tolerance*, and *gestational diabetes mellitus* .

I- Diabetes Mellitus can be divided into two major categories depending on whether endogenous insulin secretion is sufficient to prevent diabetic ketoacidosis. In most previous classifications, including that of the National Diabetes Data Group⁽⁴⁾ , the terms insulin-dependent diabetes mellitus (IDDM) and type I

diabetes are used synonymously⁽⁵⁾, a practice that has been criticized⁽⁶⁾. But minor modifications have been introduced. The term insulin- dependent diabetes mellitus will be applied to all forms of diabetes in which exogenous insulin is required to prevent diabetic ketoacidosis, regardless of etiology. The term type I will be applied only to diabetes resulting from autoimmune destruction of beta cells regardless of whether the destruction is sufficiently complete to result in ketoacidosis-prone IDDM.

Similarly , non-insulin-dependent diabetes mellitus (NIDDM) and type 2 diabetes are generally used synonymously, the term non-insulin-dependent diabetes mellitus will be applied to any form of diabetes regardless of etiology⁽⁷⁾ in which endogenous insulin production is sufficient to prevent diabetic ketoacidosis. The term type 2 diabetes will be restricted to patients with NIDDM who do not have autoimmune destruction of beta cells, diabetes secondary to pancreatic disease, or other rare causes of hyperglycemia. Thus in this formulation IDDM and NIDDM indicate only the absence or presence of beta cell function, whereas type I and type 2 distinguish between autoimmune and non autoimmune forms of diabetes, for example:-

If a patient with autoimmune diabetes was to pass through a transient non - insulin-dependent period during which beta cell destruction is incomplete, he or she would be classified as having type I NIDDM until such time as insulin dependence appeared, whereupon the classification would change to type I IDDM⁽⁸⁾ .

Insulin - Dependent Diabetes Mellitus (IDDM).

IDDM is defined by the presence of classical symptoms of diabetes such as thirst, polyuria, polyphagia, fatigue, wasting, and/or ketoacidosis and the necessity for insulin treatment not only to control the hyperglycemia and symptoms but to prevent the spontaneous occurrence of ketoacidosis⁽⁹⁾. This deficiency in insulin action leads to a variety of metabolic consequence, the more common manifestations of which are severe hyperglycemia and poorly regulated lipolysis, producing elevated concentrations of ketone bodies (acetone, acetoacetate, B-hydroxy butyrate) that lead to ketosis and ketonuria. The diagnosis of IDDM usually is made on the basis of symptoms and biochemical parameters alone. A glucose tolerance test is seldom required for diagnosis⁽¹⁰⁾.

An Etiologic Classification of IDDM can be Summarized as the Following:-

Associated with deficient insulin secretion due to:-

- A- Idiopathic autoimmune pancreatic β -cell destruction.
- B- Polyglandular autoimmune syndrome type II (Schmidt syndrome).
- C- Viral infection with β -cell destruction due to :
 - Congenital rubella. mumps virus
 - Coxsackievirus B (especially types B₄ and B₃).
 - Cytomegalovirus .
 - Retroviruses with type C particles
 - Reoviruses
 - Encephalomyocarditis virus
- D- Loss of pancreatic mass due to:
 - Acute pancreatitis .
 - Chronic relapsing pancreatitis.