شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

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بعض الوثائق الاصلية تالفة

بالرسالة صفحات لم ترد بالاصل

CLINICAL AND ELECTROPHYSIOLOGICAL STUDY OF PERIPHERAL, AUTONOMIC AND CENTRAL NERVE FUNCTIONS IN CHILDREN WITH INSULIN DEPENDENT DIABETES MELLITUS

Thesis

submitted to the Faculty of Medicine,
University of Alexandria,
in partial fulfillment of the requirements
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MASTER OF PAEDIATRICS

By

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CONTENTS

List of Abbreviations

CMAP	:	Compound Muscle Action Potential
CVR	:	Cardiovascular Reflexes
DL	:	Distal Latency
F wave	:	Following Wave
GAD	:	Glutamic Acid Decarboxylase
HLA	:	Human Leukocyte Antigen
IAAS	:	Insulin Autoantibodies
ICAS	:	Islet Cells Antibodies
IDDM	:	Insulin Dependent Diabetes Mellitus
IFG	:	Impaired Fasting Glucose
IGT	:	Impaired Glucose Tolerance
MCV	:	Motor Conduction Velocity
SBP	:	Systolic Blood Pressure
SCV	:	Sensory Conduction Velocity
SNAP	:	Sensory Nerve Action Potential
VEPs	:	Visual Evoked Potentials

بسم الله الرحمن الرحيم

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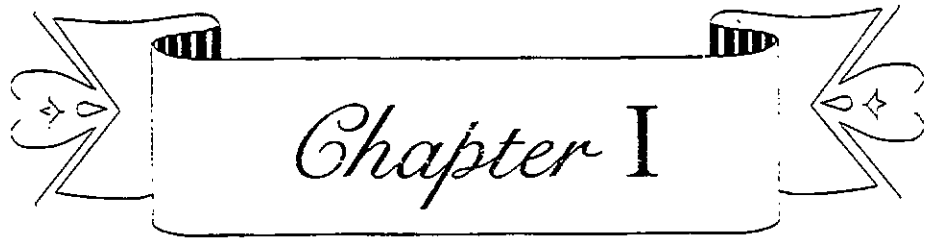

INTRODUCTION

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? List of abbreviations

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 action.(1)

Classification:

An international Expert Committee, working under the sponsorship of the American Diabetes Association, was established in 1995. The committee published a report In 1997 on the new diagnostic criteria and classification of diabetes mellitus.(2) ?
The classification is as follows:

Type 1 Diabetes Mellitus:

This condition is characterized by severe insulinopenia and dependence on exogenous insulin to prevent ketosis and to preserve life, it was therefore, formerly termed insulin-dependent diabetes mellitus (IDDM). The onset predominantly in childhood, but it may come at any age. This type can be divided into:

A. Immune mediated diabetes:

Which is characterized by pancreatic islet B cells destruction mediated by immune mechanism. This form is clearly distinct by virtue of its association with certain histocompatibility (human leukocyte antigens [HLAs]), and the presence of markers to immune destruction of beta cells which include islet cell autoantibodies (ICAs), autoantibodies to insulin (IAAs), autoantibodies to glutamic acid decarboxylase (GADs), and autoantibodies to tyrosine phosphatases IA-2 and IA-2 beta. (3-4)

B. Idiopathic diabetes:

Some forms of type 1 diabetes have no known etiology. They have permanent insulinopenia and prone to ketoacidosis, but no evidence of autoimmunity or HLA association. Only a minority of patients with type 1 diabetes fall into this category, most of them are African or Asian origin. [5]

Type 2 Diabetes:

Persons in this subclass (formerly known as adult onset diabetes, maturity-onset diabetes) are not insulin dependent, and infrequently develop ketosis, however, some may need insulin for correction of hyperglycemia, and ketosis may develop during severe infection or stress.

Serum concentration of insulin may be elevated early in the evolution of disease, but it is generally less when compared to controls. In the majority of instances, the onset of type 2 diabetes occurs after age 40, but it may occur at any age. Obesity is a frequent feature of type 2 diabetes. In U.S.A., 80-90% of these patients are obese. Obesity by itself leads to insulin resistance and predisposes or exacerbates type 2 diabetes.[6]

3. Other Specific Types of Secondary Diabetes:

Any disease process that limits insulin secretion or impairs insulin action can cause secondary diabetes. Examples include diabetes secondary to exocrine pancreatic diseases such as (cystic fibrosis, hemochromatosis, pancreatitis); endocrinopathies as (cushing syndrome, acromegaly, pheochromocytoma); and ingestion of certain drugs or proteins (e.g. vacor, nicotinic acid, thiazides, alpha-interferon). Certain genetic

syndromes are accompained by an increased incidence of diabetes mellitus like (Down's syndrome, Klinefelter's syndrome and Turner's syndrome).[7] There are no association with HLAs, autoimmunity, or islet cell antibodies among the entities in the subdivision.

4. Gestational Diabetes Mellitus (GDM):

GDM is defined as any degree of glucose intolerance with onset or first recognition during pregnancy.

Diagnostic Criteria For Diabetes Mellitus:

The diagnostic criteria for diabetes mellitus have been modified from those previously recommended by the WHO. The revised criteria for the diagnosis of diabetes are shown in table (1).

New criteria	Criteria of the recent past
Symptoms of diabetes plus a random plasma glucose ≥200 mg/dl. (11.1 mmol/L) or Fasting plasma glucose ≥126 mg/dl. (7.0 mmol/L) or 2-hr plasma glucose during the oral glucose tolerance test ≥200 mg/dl	Symptoms of diabetes plus a random glucose ≥200 mg/dl. (11.1 mmol/L) or Fasting plasma glucose ≥140 mg/dl. (7.8 mmol/L) or 2-hr plasma glucose plus one other glucose value during the oral glucose tolerance test >200 mg/dl

From Sperling MA[8]

Impaired Glucose Tolerance (IGT) and Impaired Fasting Glucose (IFG):

The term IFG is referred to a fasting plasma glucose level (FPG) 110 mg/dl or more but <126 mg/dl.

The term IGT and IFG refer to a metabolic stage between normal glucose homeostasis and diabetes. This stage includes individuals who have IFG and individuals with plasma glucose levels in excess of 140 mg/dl two hours after initiation of the oral glucose tolerance test but <200 mg/dl.

IGT and IFG are not clinical entities in their own, but rather risk factors for future diabetes and cardiovascular disease.[9,10]

Geographic Region:

The prevalence of diabetes increases from the equator to the north or south poles. In Egypt, several studies have been carried out to determine the prevalence of diabetes.[11,12] The incidence of diabetes during pilot survey study during the month of Ramadan in Alexandria was high (9.2%) and it was found that 0.69% of population were already known to have diabetes. Hassab et al[13], found that incidence of IDDM in Alexandria school students was 1.33 per thousand. In 1997, Arab et al[14], found that the incidence of IDDM was 8.3/100.00 in urban communities and 7.6/100000 in rural communities. In general, the incidence of diabetes has been increased quite rapidly over the past 20 years suggesting evidence for an environmental components.