سامية محمد مصطفى

شبكة المعلومات الجامعية

# بسم الله الرحمن الرحيم


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# التوثيق الالكتروني والميكروفيلم

سامية محمد مصطفى

شبكة المعلومات الجامعية

# جامعة عين شمس

## التوثيق الإلكتروني والميكروفيلم

# قسم

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

# يجب أن

## تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

سامية محمد مصطفى

شبكة المعلومات الجامعية

# بعض الوثائق الأصلية تالفة

سامية محمد مصطفى



# بالرسالة صفحات لم ترد بالأصل

# Study of von Willebrand Factor in diabetic patients

Thesis

*Submitted in partial fulfillment of the Requirements of the Master Degree*

*In Internal Medicine*

*By*

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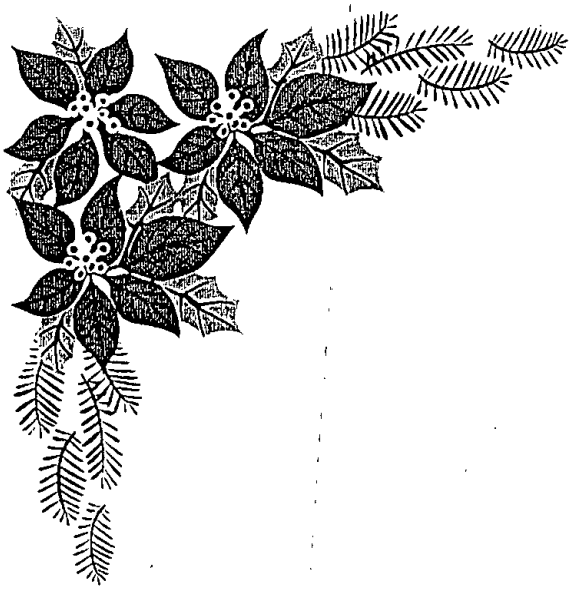

# INTRODUCTION

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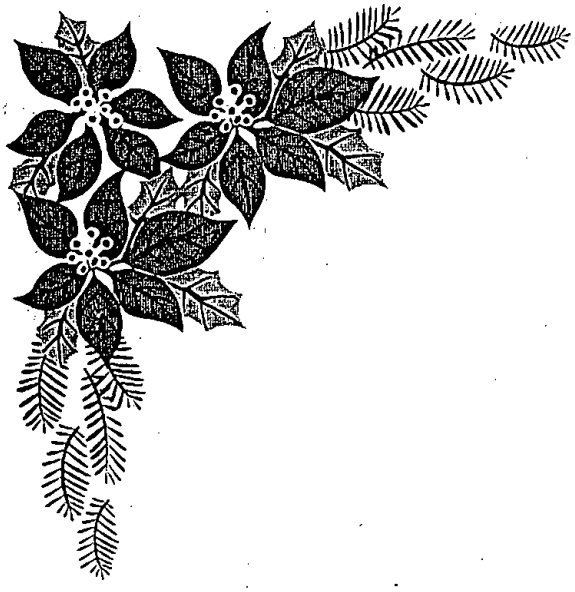
The vascular complications (macrovascular and microvascular) represent the main chronic complication of diabetes mellitus. Microvascular complications of diabetes represent one of the most serious consequences of the disease. Although all microvascular blood vessels are involved clinically , only those in the retina, renal glomeruli, and possibly the large nerves exhibit significant pathology[10]

Vascular endothelium is intimately involved in the regulation of various processes, e.g., homeostasis, fibrinolysis, vasomotor control and vascular permeability, all of which may be relevant to the pathogenesis of diabetic complications. Therefore markers of endothelial dysfunction are candidate risk indicators for the development of such complications. Von Willebrand factor (vWf), a glycoprotein important in primary hemostasis and synthesized mainly by endothelial cells, may serve as such a marker [11].

Hence it is of great scientific importance in the present study to evaluat the VWF in diabetic patients as a marker of endothelial function.



# REVIEW OF LITERATURE

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# Diabetes Mellitus

## *Definition:*

Diabetes Mellitus is a syndrome characterized by chronic hyperglycemia and disturbance of carbohydrate , fat and protein metabolism associated with absolute or relative deficiencies in insulin secretion and or insulin action .When fully expressed , it is charactarized by fasting hyperglycemia [1].

## *Classification*

In the past decade and a half ,a much firmer understanding of the pathogenesis and in some cases,the etiology of the various categories of diabetes has been attained. On the basis of these new finding .Both the Export Committee on the Diagnoses and Classification of Diabetes (consitituted by the American Diabetes Association) [11] and the WHO [12] have proposed a new classification of diabetes and its related disorders with the following modifications:

1- The terms insulin-dependent diabetes mellitus and non-insulin-dependent diabetes mellitus and their acronyms (IDDM) and (NIDDM) have been eliminated. Many physicians allied health professionals and patients have been confused by this nomenclature and mistakenly classified all individuals receiving insulin as having IDDM. The terms type 1 and type 2 diabetes are retained.

2. The category of diabetes named type 1 includes all forms of diabetes that rate either primary caused by autoimmune destruction of the pancreatic β-cells or due to a primary defect in β-cells function secondary to another (nonautoimmune) cause.

3. The category of diabetes named type 2 includes the most common form of diabetes, which results from insulin resistance combined with inadequate insulin secretion.

4. IGT ( imparde glucose tolerance ) is removed as a distinct clinical entity and is considered to be a risk factor only.

5. The category of gestational diabetes is retained but has been defined differenlty by the Expert Committee on the classification and diagnosis of diabetes and the WHO.

6. Malnutrition –related diabetes has been deleted by the WHO.

It is important to realize that in this new classification , patients with any from of diabetes may require insulin treatment at some stage of their disease. The use of insulin perse dose not help to designate which category of diabetes a patient has.

## *Table of Etiological classification* [2]

### *Clinical Diabetes*

**I- Type I diabetes,** formerly called insulin-dependent diabetes mellitus (IDDM) or " juvenile-onset diabetes".

- Immune mediated.
- Idiopathic.

**II- Type II diabetes**, formerly called non- insulin –dependent diabetes mellitus (NIDDM) or " adult –onset diabetes".

**III- Other specific types**.

A-Genetic defects β-cell function (e.g., maturity-onset diabetes of the young [MODY] types 1-3 and point mutations in mitochondrial DNA).

B-Genetic defects in insulin action.

C-Disease of the exocrine pancreas )e.g., pancreatitis, trauma, pancreatectomy neoplasia , cystic fibrosis, hemochromatosis, fibrocalculous panacreatopathy).

D-Endocrinopthies (e.g, acromegaly, Cushing's syndrome , hyperthyroidism, phoechromocytoma, glucagonoma, somatostinoma, alsodteronoma).

E- Drug or chemical induced (e.g, glucocorticosteriods thiazides, diazoixde, pentamidine, vancor, thyroid hormone, phenytoin [Dilantin],

β -agonists, oral contraceptives)

F- Infections (e,g. congenital rubella, cytomegalovirus).

G- Uncommon forms of immune-mediated diabetes (e.g, stiff-man syndrome, anti-insulin receptor antibodies).

H- Other genetic syndromes (e,g. Down Klinegfelte's, Turner's syndrome, Huntigton's disease, myotonic dystrophy, lipodystrophy, ataxia-telangiectasia).

**IV- Gestational diabetes mellitus.**

# Type I diabetes mellitus (IDDM)

## *Pathogenesis*

Type I diabetes mellitus is an autoimmune disorder in which β-cell destruction occurs in genetically susceptible host .[3] Autoimmune distruction of β-cell has genetic predisposition that can be identified by human leukocyte antigen [HLA] typing but is also related to enviromental factors that are still poorly understood. [4]

The following antibodies have been reported in type I diabetes: cytoplasmic islet cell autoantibodies; insulin autoantibodies; antibodies to glutamic acid decar-boxylase. (GAD, the 64- kd. Protien); islet cell surface autoantibodies; and carboxypeptidase H autoantiodies [5]

The hallmark of type I is an almost compelet distruction of β-cells with maintenance of the α (*glucagon-secreting*) and γ (*Somatostin-secreting*) cells within islets of langerhans. [6]

## *Etiological classification [1]*

An etiologic classification of IDDM can be summarized as the following:

**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.