

127, 17 27, 17 (20) 77, 17 (20









جامعة عين شمس

التوثيق الالكتروني والميكروفيلم



نقسم بللله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأفلام قد اعدت دون آية تغيرات



يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15-20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of 15 – 25c and relative humidity 20-40 %



ثبكة المعلومات الجامعية





Information Netw. " Shams Children Sha شبكة المعلومات الجامعية @ ASUNET بالرسالة صفحات لم ترد بالأص

Plasma E-selectin Level in Type II Diabetic Patients

THESIS

Submitted to The Medical Research Institute in partial fulfillment of the requirements for the

Master Degree

In

Chemical Pathology

By

Mona Mohamed Kamal Zaki El-Deeb

M.B.B.Ch. Faculty of Medicine, Alexandria University (1996)

B/.479

Medical Research Institute Alexandria University 2002

الرسان بتقديم مناز في الرساد ١١٥ منافري الرساد ١١٥ مناز في الرساد المراد والمراد المراد المرا





ACKNOWLEDGEMENT

I wish to express my deepest gratitude to all those who assisted me to complete this work.

First and foremost, my thanks are directed to Professor Dr. Safaa Abdel Rahman El-Hefni, Professor of Clinical Pathology, Medical Research Institute, University of Alexandria, for her unlimited help and continuous insistence on perfection, without her constant supervision, this thesis could not have achieved its present form.

I would like to express my indebtedness and deepest gratitude to Professor Dr. Thanaa Fathy Moghazy, Professor of Clinical Pathology, Medical Research Institute, Alexandria University for her valuable advice, guidance and constructive criticism, also for the valuable assistance and efforts she devoted in the supervision of this study.

I would like to express my deepest gratitude and respect to my supervisor Professor Dr. Wafaa Saad Ragab Professor of Chemical Pathology, Medical Research Institute, Alexandria University for expert guidance during the course of study and for her valuable effort and comments during reading the thesis.

I am also indebted to **Dr. Abdel Aziz Atea El- Kak,** Lecturer of Internal Medicine, Medical Research
Institute, University of Alexandria who devoted much of his
time and showed a great interest in providing me with
valuable criticism, informing guidance and encouragement.



List of Abbreviations

2hPP SG Two hours post prandial serum glucose

aa Amino acid

ADP Adinosine diphosphate

AGEs Advanced glycation end products

ANOVA Analysis of variance

Ca⁺² Calcium ions

CAMs Cell adhesion molecules

CD Cluster of differentiation

CD62E Cluster of differentiation 62 E

CD62L Cluster of differentiation 62L

CD62P Cluster of differentiation 62 P

cDNA Cloned deoxyribonucleic acid

CRP C-reative protein

Cs Concentration of standard

DBP Diastolic blood pressure

DDM Duration of diabetes mellitus

DM Diabetes mellitus

ECG Electrocardiogram

EDTA Ethylene diamine tetraacetic acid

EGF Epidermal growth factor

ELAM-1 Endothelial leukocyte adhesion molecule-1

ESRD End stage renal disease

ESRF End stage renal failure

F Female

FSG Fasting serum glucose

Fuc α Fucose - alpha

Fuc-T Fucosyl transferases

Gal NAC N-acetyl galactosamine

Gal Galactose

GFR Glomerular filtration rate

Gly CAM-1 Glycated cell adhesion molecule-1

GMP Granule membrane protein

GTT Glucose tolerance test

H₂O₂ Hydrogen peroxide

H₂SO₄ Sulphuric acid

HbAo Non-glycosylated hemoglobin

HbA₁c Glycated hemoglobin 1c

HDL-C High density lipoprotein-cholesterol

HEV Human endothelial venule

HRP Horseradish peroxidase

ICAM Intercellular adhesion molecule

IDDM Insulin dependent diabetes mellitus

IHD Ischemic heart disease

 IL_1 Interleukin 1

LADII Leukocyte adhesion deficiency II

LAM-1 Leukocyte adhesion molecule-1

LDL-C Low density lipoprotein cholesterol

LECAM-1 Leukocyte endothelial cell adhesion molecule-1

LFA Leukocyte function antigen

LPs Lipopolysaccharide

M Male

MACAM-1 Mucosal adhesion cell adhesion molecule-1

NCAM Neural cell adhesion molecule

NIDDM Non-insulin dependent diabetes mellitus

Nue NAC N-acetyl neuraminic acid

PDR Proliferative diabetic vitreoretinopathy

PEAM-1 Platel

Platelet endothelial adhesion molecule-1

PEG

Polyethylene glycol

PNCV

Peroneal nerve conduction velocities

 PO_4

Phosphate

S

Standard

SBP

Systolic blood pressure

SCR

Short consensus repeat

S.D.

Standard deviation

S.E.

Standard error

sE-selectin

Soluble E-selectin

Τ

Test sample

T-Chol

Total-cholesterol

TG

Triglycerides

TMB

Tetramethyl benzidine

 $TNF\alpha$

Tumor necrosis factor alpha

VCAM-1

Vascular cell adhesion molecule-1

VLDL

Very low density lipoproteins

 \overline{X}

Arithmetic mean

CONTENTS

		Page
I.	INTRODUCTION	1
	Chapter I: E-selectin	1
	Chapter II: Type 2 Diabetes Mellitus	11
	Chapter III: E-selectin in Type 2 Diabetes	20
II.	AIM OF THE WORK	22
III.	MATERIAL AND METHODS	23
IV.	RESULTS	40
V.	DISCUSSION	86
VI.	SUMMARY AND CONCLUSION	104
VII.	REFERENCES	109
	PROTOCOL	
	ARABIC SUMMARY.	

List of Tables

Table		Page
(Ia)	Age (years), sex and blood pressure (mmHg) of the control group	42
(Ib)	Some clinical data in the whole patients group	43
(Ic)	Some clinical data in patient group without microalbuminuria (Group I)	44
(Id)	Some clinical data in the patients group with microalbuminuria (Group II)	45
(Ie)	Some clinical data in the patients group with Frank proteinuria (Group III)	46
(If)	Statistical analysis of systolic blood pressure and diastolic blood pressure in the studied groups.	47
(IIa)	Fasting and 2 hours postprandial serum glucose and glycosylated hemoglobin in the studied subjects	50
(IIb)	Fasting and two hours post prandial serum gluscose and glycosylated hemoglobin in the patients group without microalbuminuria	51
(IIc)	Fasting and two hours post prandial serum gluscose and glycosylated hemoglobin in the patients group with microalbuminuria	52

Table		Page
(IId)	Fasting and two hours post prandial serum gluscose and glycosylated hemoglobin in the patients group with frank proteinuria	53
(IIe)	Statistical analysis of glycemic control parameters in the studied groups	54
(IIIa)	Lipid profile in the studied groups	58
(IIIb)	Lipid profile in the patients group without microalbuminuria	59
(IIIc)	Lipid profile in the patients group with microalbuminuria	60
(IIId)	Lipid profile in the patients group with frank proteinuria	61
(IIIe)	Statistical analysis of lipid profile in the studied groups	62
(IVa)	Serum creatinine in the studied groups	64
(IVb)	Statistical analysis of serum creatinine in the studied groups	65
(Va)	Urinary proteins in the studied groups	6 ₇ 7
(Vb)	Mean values of urinary protein, urinary creatinine and urinary protein creatinine ratio in the patients group with frank proteinuria.	68
(VIa)	E-selectin level of the control and the whole patients group	70
(VIb)	E-selectin level in the studied groups	71

ĺ