



**Prognostic value of Liver Fatty Acid– Binding Protein
for impairment of Renal function in Type 2 Diabetic
Patients**

A thesis for partial fulfillment of the Requirements for
master Degree of Science in Biochemistry

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Dedication

To my father, my mother, my sisters, my brother, and my
friends

Their love, encourage, help made studies possible and to
them I owe my success thank you.

Marwa Atta Hussein

Declaration

This thesis has not been submitted to this or any other
University

Marwa atta Hussein

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CONTENTS

CONTENTS	Page
Abbreviations.	I
List of figures.	V
List of tables.	VII
Abstract	VIII
Introduction	1
Aim of work	3
Review of Literature	4
➤ Diabetes Mellitus.	4
➤ Classification of Diabetes.	6
➤ Type 2 diabetes mellitus.	7
➤ Epidemiology.	8
➤ Etiology Type 2 Diabetes.	8
➤ Genetic factors.	9
➤ Environmental factors.	10
➤ Pathophysiology.	11
➤ Insulin resistance.	12
➤ Complications of Diabetes.	13
➤ Diabetic nephropathy.	14

➤ Risk factors.	16
➤ Physiopathology of diabetic nephropathy	17
➤ Biomarkers of DN.	18
➤ Proteinuria.	20
➤ Inflammatory cytokines as biomarkers in diabetic Nephropathy.	22
➤ Interleukin-6 (IL-6).	24
➤ Regulation of IL-6 Synthesis.	25
➤ Neuropeptide Y (NPY).	27
➤ Primary Structure of NPY.	28
➤ Neuropeptide Y and its Receptors.	28
➤ Neuropeptide Effects on Inflammation	29
➤ Liver-type fatty acid binding protein (LFABP).	31
Subjects and methods	35
Results	53
Discussion	79
Summary	101
Reference	104
الملخص العربي	
المستخلص	

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Contents

Contents	Page
Abbreviations.	i
List of figures.	v
List of tables.	vii
Abstract	viii
Introduction	1
Aim of work	3
Review of Literature	4
➤ Diabetes Mellitus.	4
➤ Classification of Diabetes.	6
➤ Type 2 diabetes mellitus.	7
➤ Epidemiology.	8
➤ Etiology Type 2 Diabetes.	9
➤ Genetic factors.	9
➤ Environmental factors.	10
➤ Pathophysiology.	11
➤ Complications of Diabetes.	12
➤ Diabetic nephropathy.	14
➤ Risk factors.	16

➤ Physiopathology of diabetic nephropathy	17
➤ Biomarkers of DN.	18
➤ Proteinuria.	20
➤ Inflammatory cytokines as biomarkers in diabetic Nephropathy.	22
➤ Interleukin-6 (IL-6).	23
➤ Regulation of IL-6 Synthesis.	24
➤ Neuropeptide Y (NPY).	26
➤ Primary Structure of NPY.	27
➤ Neuropeptide Y and its Receptors.	27
➤ Neuropeptide Effects on Inflammation	28
➤ Liver-type fatty acid binding protein (LFABP).	29
Subjects and methods	33
Results	61
Discussion	82
Summary	103
Reference	107
الملخص العربي	--
المستخلص	--

ABBREVIATIONS

AGEs	:	Advanced glycation end products
ANG II	:	Angiotensin II
ATP	:	Adenosine tri phosphate
AKI	:	Acute kidney disease
ACE	:	Angiotensin-converting enzyme
ATP	:	adenosine-5-triphosohate
ANOVA	:	One way variant analysis
AUC	:	Area under the curve
BMI	:	Body mass index
CKD	:	Chronic Kidney Disease
CSF	:	Cerebrospinal fluid
CNS	:	Central nervous system
DM	:	Diabetes Mellitus
DN	:	Diabetic nephropathy
DKD	:	Diabetic kidney disease
DBP	:	Diastolic blood pressure
ESRD	:	End stage renal disease
ECM	:	Extracellular matrix
e-GFR	:	estimated glomerular filtration rate
ELISA	:	Enzyme-Linked immunosorbent assay
FBG	:	Fasting blood glucose
FFAs	:	Free fatty acids
GIGT	:	Gestational impaired glucose tolerance
GDM	:	Gestational diabetes mellitus
GWAS	:	Genome wide association study
GFR	:	Glomerular filtration rate
GPCRs	:	G protein-coupled receptors
GBM	:	Glomerular basement membrane
H-FABP	:	Heart-type fatty acid binding protein
HbA1C	:	Glycatedhaemoglobin
HDL-c	:	High density lipoprotein cholesterol

Abbreviation

HbA ₀	:	Non glycosylated hemoglobin
HRP	:	Horseradish peroxidase
HOMA-IR	:	Homeostatic Model Assessment for Insulin Resistance.
IDF	:	International Diabetes Federation
IDDM	:	Insulin-dependent diabetes mellitus
IFG	:	Impaired fasting glucose
IGT	:	Impaired glucose tolerance
IL-6	:	Interleukin-6
IL-18	:	Interleukin- 18
IL-1b	:	Interleukin-1b
iLBPs	:	intracellular lipid binding proteins
KIM-1	:	Kidney injury molecule-1
kDa	:	Kilo Dalton
kB	:	Kappa B
L-FABP	:	Liver-type fatty acid binding protein
LCFA	:	Long-chain fatty acid
LDL-c	:	Low densitylipoprotein cholesterol
LPL	:	Lipoprotein lipase
MENA	:	Middle East and North Africa
MCP-1	:	Monocyte chemo attractant protein-1
MOR	:	μ -opioid receptor
mAB _s		Monoclonal antibodies
MDRD		Modification of Diet in Renal Disease
NIDDM	:	Non insulin-dependent diabetes mellitus
NGT	:	Normal glucose tolerance
NPY	:	Neuropeptide Y
NPYR _s	:	NPY receptors
PKC	:	protein kinase C
PRR _s	:	Pathogen-recognition receptors
PP	:	pancreatic polypeptide
PYY	:	Peptide YY
PPAR α	:	Peroxisome proliferator activated receptor- α

Abbreviation

PPV	:	Positive predictive value
ROS	:	Reactive oxygen species
Rpm	:	Resolution per minute
ROC	:	Receiver Operating Characteristi
SD	:	Standard Deviation
SBP	:	Systolic blood pressure
s-Cr	:	Serum creatinine
T2DM	:	Type 2 diabetes mellitus
T1DM	:	Type 1 diabetes mellitus
TGF- β	:	Transforming growth factor β
TNF- α	:	Tumor necrosis factor- α
TNFR1	:	Tumor necrosis factor receptor-1
TLRs	:	Toll-like receptors
TC	:	Total cholesterol
TAG	:	Triacylglycerol
TMB	:	3,3,5,5- tetramethylbenzidin
UAER	:	urinary albumin excretion rate
u-LFABP	:	Urinary Liver-type fatty acid binding protein
u-Cr	:	Urine creatinine
VIP	:	Vasoactive intestinal peptide
VLDL-C	:	Very low density lipoprotein cholesterol
WHO	:	World health organisation

List Of Figures

Figure	Title	Page
1	Schematic overview of the major areas contributing to diabetic complications	13
2	Biomarkers of diabetic nephropathy during the development and progression of kidney diseases.	19
3	Percentage change of plasma glucose, plasma insulin HOMA-IR and HbA1C% between patient groups and control group.	62
4	Percent change of kidney function tests in the studied groups.	64
5	Percentage change of lipid profile in the studied groups.	66
6	percentage change of IL-6, NPY and u-LFABP in the studied groups.	68
7	positive correlation between s –BUN and LDL-c in DN group	71
8	positive correlation between u-FABP and HDL-c in DN group	72
9	positive correlation between u-LFABP and s- creatinine in DN group	73
10	Negative correlation between FBS and e-GFR in DN group	74
11	positive correlation between u-LFABP and HbA1c in DKD group	75
12	positive correlation between u-LFABP and IL-6 in DKD group	76
13	Negative correlation between u-LFABP and NPY in DKD group	77
14	positive correlation between u-LFABP and UAE in DKD group	78

List of figures

15	positive correlation between u-LFABP and s-creatinine in DKD group	79
16	Negative correlation between s-creatinine and NPY in DKD group	80
17	Negative correlation between HbA1c and NPY in DKD group	81
18	Negative correlation between IL-6 and NPY in DKD group	82
19	Negative correlation between UAE and NPY in DKD group	83
20	ROC curve for NPY, u-LFABP and UAER in DN group	85
21	ROC curve for NPY, u-LFABP and UAER in DKD group	86