

**Elevated Urinary Level of Vitamin D
Binding Protein as a Biomarker
for Diabetic Nephropathy**

Thesis

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in Internal Medicine*

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قالوا

سببنا انك لا تعلم لنا
إلا ما علمتنا إنك أنت
العليم العظيم

صدق الله العظيم

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Contents

List of Abbreviations	I
List of Tables	IV
List of Figures	V
Introduction	1
Aim of the Work	4
Review of Literature	
• Chapter (1): Diabetic Nephropathy	5
• Chapter (2): Vitamin D Binding Protein (DBP) Structure and Function	36
• Chapter (3): Vitamin D and Kidney	67
Patients and Methods	96
Results	106
Discussion	122
Summary and Conclusion	131
Recommendations	135
References	136
Appendix	173
Arabic Summary	--

List of Abbreviations

Abb.	Description
ACE	Angiotensin converting enzymes
ACORD	Anemia correction and diabetes
ACR	Albumin creatinine ratio
AFP	Alpha fetoprotein
ALB	Albumin
ALS	Amyotrophic lateral sclerosis
BMD	Bone mineral density
BMI	Body mass index
BUN	Blood urea nitrogen
CARDS	Collaborative atorvastatin diabetes study
CKD	Chronic kidney disease
COPD	Chronic obstructive pulmonary disease
CRP	C- Reactive protein
CVD	Cardiovascular disease
DBP	D binding protein
DCCT	Diabetes control and complications trial
DN	Diabetic nephropathy
EGFR	Epidermal growth factor receptor
ELISA	Enzyme linked immunosorbent assay
ESRD	End stage renal disease
EURODIAB	European diabetes
FBS	Fasting blood sugar
FGF	Fibroblast growth factor
GBM	Glomerular basement membrane
GFR	Glomerular filtration rate
HDL	High density lipoprotein

Abb.	Description
HOPE	Heart outcomes prevention evaluation
HOT	Hypertension optimal treatment
IGFBD	Insulin like growth factor binding protein
IL	Interleukin
KDIGO	Kidney disease improving global outcomes
KDOQI	Kidney disease outcome quality initiative
LDL	Low density lipoprotein
LVH	Left ventricular hypertrophy
LVMi	Left ventricular mass index
MAPK	Mitogen activated protein kinase
MDRD	Modified diet renal disease
MESA	Multiethnic study of atherosclerosis
MRI	Magnetic resonance imaging
MS	Multiple sclerosis
NHANES 3	Third national health and nutrition examination survey
OCP	Oral contraceptive pills
OPG	Osteoprotegerin
PHPT	Primary hyperparathyroidism
PPBS	Post prandial blood sugar
PTH	Parathyroid hormone
RAAS	Renin angiotensin aldosterone system
RANKL	Receptor activator for nuclear kappa B
RRID	Renal risk in derby
SHBG	Sex hormone binding protein
SLE	Systemic lupus erythematosus
TBG	Thyroid binding globulin
TDF	Tenofovir disoprpxil fumarate

Abb.	Description
TGF	Tumor growth factor
TGN	Transforming growth factor
TGs	Triglycerides
TLR	Toll like receptor
TNF	Tumor necrosis factor
Treg	Regulatory T cells
UAE	Urea and electrolytes
UKPDS	United kingdom prospective diabetes study
UVDBP	Urinary vitamin D binding protein
UVR	Ultraviolet radiation
VDBP	Vitamin D binding protein
VDR	Vitamin D receptors
VDRA	Vitamin D receptor activators
VDRBKO	Vitamin D role using a VDR knockout
VDRE	Vitamin D responsive element
VEGF	Vascular endothelial growth factor
VSMC	Vascular smooth muscle cells

List of Tables

Table	Title	Page
1	Development of Diabetic Nephropathy	22
2	Blood pressure goals and recommended agents	27
3	Comparison between groups as regard demographic data	106
4	Comparison between groups as regard laboratory data	109
5	Comparison between groups as regard VDBP level	113
6	Correlations between VDBP and other study parameters	114
7	Relation between VDBP and Smoking	118
8	Relation between VDBP and gender	118
9	Multivariate linear regression analysis	119
10	Diagnostic performance of VDBP level as a marker of Microalbuminuria	120

List of Figures

Figure	Title	Page
1	Flow chart for management of diabetic nephropathy	23
2	The vitamin D hormone modifications and its cellular effects	70
3	Result of vitamin D binding Protein	104
4	Comparison between groups as regard age	107
5	Comparison between groups as regard DM duration	108
6	Comparison between groups as regard HBA1c	110
7	Comparison between groups as regard TGs	110
8	Comparison between groups as regard cholesterol	111
9	Comparison between groups as regard eGFR	111
10	Comparison between groups as regard ACR	112
11	Correlations between VDBP and age	115
12	Correlations between VDBP and eGFR	115
13	Correlations between VDBP and DM duration	116
14	Correlations between VDBP and HBA1c	116
15	Correlations between VDBP and ACR	117
16	ROC curve showing diagnostic performance of VDBP level as a marker of microalbuminuria	120



Introduction





Aim of the Work





Chapter (1)

Diabetic Nephropathy





Chapter (2)

Vitamin D Binding Protein (DBP) Structure and Function





Chapter (3)

Vitamin D and Kidney





Patients and Methods

