

DEDICATION

To my husband Rahamtalla

To the soul of my father

To my mother

To the soul of my aunt Alawia

To my uncle Elamin

To my sons and daughters

To my sisters and brothers

Acknowledgements

I am indebted to Dr. Samia Mahdi, my supervisor who gave me much of here valuable time and kept supervising me all the way. I would never forget her kindness and help.

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Abstract

This study was held to determine the prevalence of microalbuminuria (MAU) on urine samples of Sudanese type 2 diabetic patients (non- insulin-dependent).

Across sectional hospital based study was carried out in Elmusbah Medical Center-Omdurman-Khartoum state from November 2008 to March 2009. Fifty eight of type 2 diabetic patients ; 29 females (aged 35 - 80 years) and 29 males (aged 43 - 88 years) were enrolled in this study, urinary albumin concentration was measured by immunoturbidimetric assay. Microalbuminurias patients were diagnosed as the urinary albumin excretion $>2\text{mg}/\text{mmol}$ of creatinine in males and $> 2.8\text{mg}/\text{mmol}$ in females.

Microalbuminuria was diagnosed in 26 (44%) patients out of the total number (58) of the patients included in the study .The prevalence of MAU was 8.66% from total populations (N=300).

The risk factors associated with MAU were age, duration of diabetes, systolic and diastolic blood pressure. These findings encourage us for tight blood glucose control to reduce the burden of diabetic kidney disease among Sudanese diabetic patients in the future.

مستخلص الدراسة

أجريت هذه الدراسة لمعرفة شيوع المايكروالبومين يوريا في عينة بول مرضى السكري السودانيين من النوع الثاني.

شملت هذه الدراسة 58 عينة من مرضى السكري - النوع الثاني, 29 منهم ذكور تراوحت أعمارهم بين 43-88 سنة و 29 إناث تراوحت أعمارهن بين 35-80 سنة من مركز المصباح الطبي بامبدة في الفترة من نوفمبر 2008 إلى مارس 2009 و تم قياس الألبومين في البول بواسطة طرق تحليل مناعية واعتمد التشخيص على نسبة الألبومين إلى الكرياتينين عندا لذكور اكبر من 2مليجرام/ملي مول بينما عند الإناث اكبر من 2.8 مليجرام/ملي مول .

بينت الدراسة أن 26 شخصا مصابون و هم يمثلون 44% من العينة المختبرة كما جاءت نسبة شيوع المرض 8.66% من المجموع الكلي من النوع الثاني للمستفيدين من خدمات المركز الصحية وهم 300 .وعوامل الخطورة المرتبطة بالمايكروالبومين يوريا هي:العمر, مدة الإصابة بمرض السكري.

و عليه فان هذه النتيجة تتطلب تنظيم سكر الدم لتفادي تأثيره على الكلى عند المرضى في المستقبل.

CONTENTS

Topics	Pages
Dedication	1
Acknowledgments	11
English Abstract	111
Arabic Abstract	1V
Contents	V
List of Tables	1X
List of Figures	1X
List of Abbreviations	X

CHAPTER ONE

1	Introduction and Literature Review	
1.1	Introduction	1
1.2	Literature Review	4
1.2.1	Definition of DM	4
1.2.2	Hormonal control of blood glucose	4
1.2.2.1	Insulin	4
1.2.2.2	Other hormones	5
1.2.3	Classification of diabetes	6
1.2.4	Criteria of the diagnosis of DM & methods of glucose measurements	9
1.2.5	Complications of DM	13
1.2.5.1	Acute complications of DM	14
1.2.5.2	Chronic complications of DM	16
1.2.5.2.1	Neuropathy and DM	16
1.2.5.2.2	Ophthalmologic complication of	17

	DM	
1.2.5.2.3	Renal complication of DM or nephropathy	17
1.2.5.2.3.1	Pathophysiology of diabetic nephropathy	17
1.2.5. 2.3.2	Diagnosis of diabetic nephropathy	18
1.2.5.2.3.3	Treatment of diabetic nephropathy	21
1.2.6	Microalbuminuria	23
1.2.6.1	Definition	23
1.2.6.2	Etiology and causes	23
1.2.6.2.1	Risk factors	23
1.2.6.3	Significance of MAU	24
1.2.6.4	Diagnosis of MAU	26
1.2.6.5	Preventing of MAU in type2 diabetes	27
1.2.6.6	Prognosis	28
1.2.6.6	Microalbuminuria in Sudan	31

CHAPTER TWO

.2	Materials and Methods	32
2.1	Study design	32
2.2.1	The principle	33
2.2.2	Reagents	33
2.2.3	Quality controls	34
3 .2	Measurement of creatinine	34
3.1 .2	The principle	35
3.2 .2	Reagents	35
2.3.3	Quality controls	35
2.4	Measurement of blood glucose	36

2.4.1	The principle	36
2.4.2	Reagents	36
2.4.3	Quality controls	36
2.5	Statistical analysis	37

CHAPTER THREE

.3	Result	38
3.1	Prevalence of MAU in Sudanese diabetic patients	38
3.2	Albumin/Creatinine ratio	38
3.3	Risk factors associated with high MAU in Sudanese diabetic patients	40

CHAPTER Four

4.	Discussion	43
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CHAPTER Five

5.	Conclusion and Recommendation	45
5.1	Conclusion	45
5.2	Recommendation	45
	References	46
	Appendix	53

List of Tables

Tables	Pages
Table : 1.1 Clinical characteristics of patient with type1&type2 diabetes	8
Table :1.2 Diagnostic criteria for D M	11
Table :1.3 Categories of fasting plasma glucose	11
Table :1.4 Categories of O GG T	11
Table :1.5 Estimated correlation between mean plasma	12

glucose and Hb A1C levels	
Table :1.6 Stage of kidney involvement according to the urinary albumin level	25
Table: 3.1 The mean and standard deviation of ACR among diabetic patients and healthy controls	38
Table: 3.2 Shows a comparison between numbers of patients with and without microalbuminuria	39
Table : 3.3 Risk factors associated with diabetes among males	40
Table : 3.4 Risk factors associated with diabetes among females	41
Table : 3. 5 Comparison between diabetic male and female regarding fasting blood sugar(FBS)	42

List of Figures

Figure Title

Figure 1.1: Screening for microalbuminuria	30
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List of Abbreviations

AACC	American Association Control Center
ACE	Angiotensin Converting Enzyme
ACR	Albumin Creatinine Ratio
ADA	American Diabetes Association
AGEs	Advanced Glycation End Products
ARB	Angiotensin11 Receptor Blocker
AT2	2 antagonists
BMI	Body Mass Index

BNF	British National Formulary
BP	Blood Pressure
CDA	Center of Diabetes Association
CV	Cardio Vascular
DBP	Diastolic Blood Pressure
DCCT	Diabetes Control and Complications Trial
DKA	Diabetic ketoacidosis
DM	Diabetes Mellitus
DN	Diabetes Nephropathy
ECF	Extra Cellular Fluid
EDIC	Epidemiology of Diabetes Interventions and Complications
ESRD	End Stage Renal Disease
FPG	Fasting Plasma Glucose
FBS	Fasting Blood Sugar
GBM	Glomerular Basement Membrane
GDM	Gestational Diabetes Mellitus
GOD	Glucose Oxidase
GFR	Glomerular Filtration Rate
GTT	Glucose Tolerance Test
HDL	High Density Lipoprotein
HNKS	Hyperglycemic Hyperosmolar Non – Ketotic Syndrome
IDDM	Insulin Dependant Diabetes Mellitus
IRMM	Institute for reference Materials and Measurements
KU	King Armstrong Unit
LDL	Low Density Lipoprotein
MA or MUA	Microalbuminuria
MODY	Maturity Onset Diabetes of the Young
NADH	Nicotine amide Adenine Dinucleotide
NDDG	National Diabetes Data Group
NIDDM	Non Insulin Dependant Diabetes Mellitus
NKHS	Non- ketotic hyperglycemia Hyperosmolar State

OGTT	Oral Glucose Tolerance Test
PG	Plasma Glucose
POD	Peroxidase
P. Value	Predictive Value
SBP	Systolic Blood Pressure
SD	Standard Deviation
SPSS	Statistic Packet of Social Science
T1D	Type1 Diabetes
T2D	Type 2 Diabetes
TGF - B	Transforming Growth Factor - B
UKPDSG	UK Prospective Diabetes Study Group
UTI	Urinary Tract Infection
WHO	World Health Organization