شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم باللّه 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

شبكة المعلومات الجامعية

بعض الوثائق الأصلية تالفة

شبكة المعلومات الجامعية

بالرسالة صفحات
لم ترد بالأصل

DISTURBANCE OF SOME ELECTROLYTES AND TRACE ELEMENTS BEFORE AND AFTER HEMODIALYSIS IN RENAL FAILURE AND TRANSPLANTED PATIENTS

Thesis submitted by

SAYEDA HAMAD ABD EL HAMID

For the fulfilmment of Master Degree of Science in (Biochemistry)

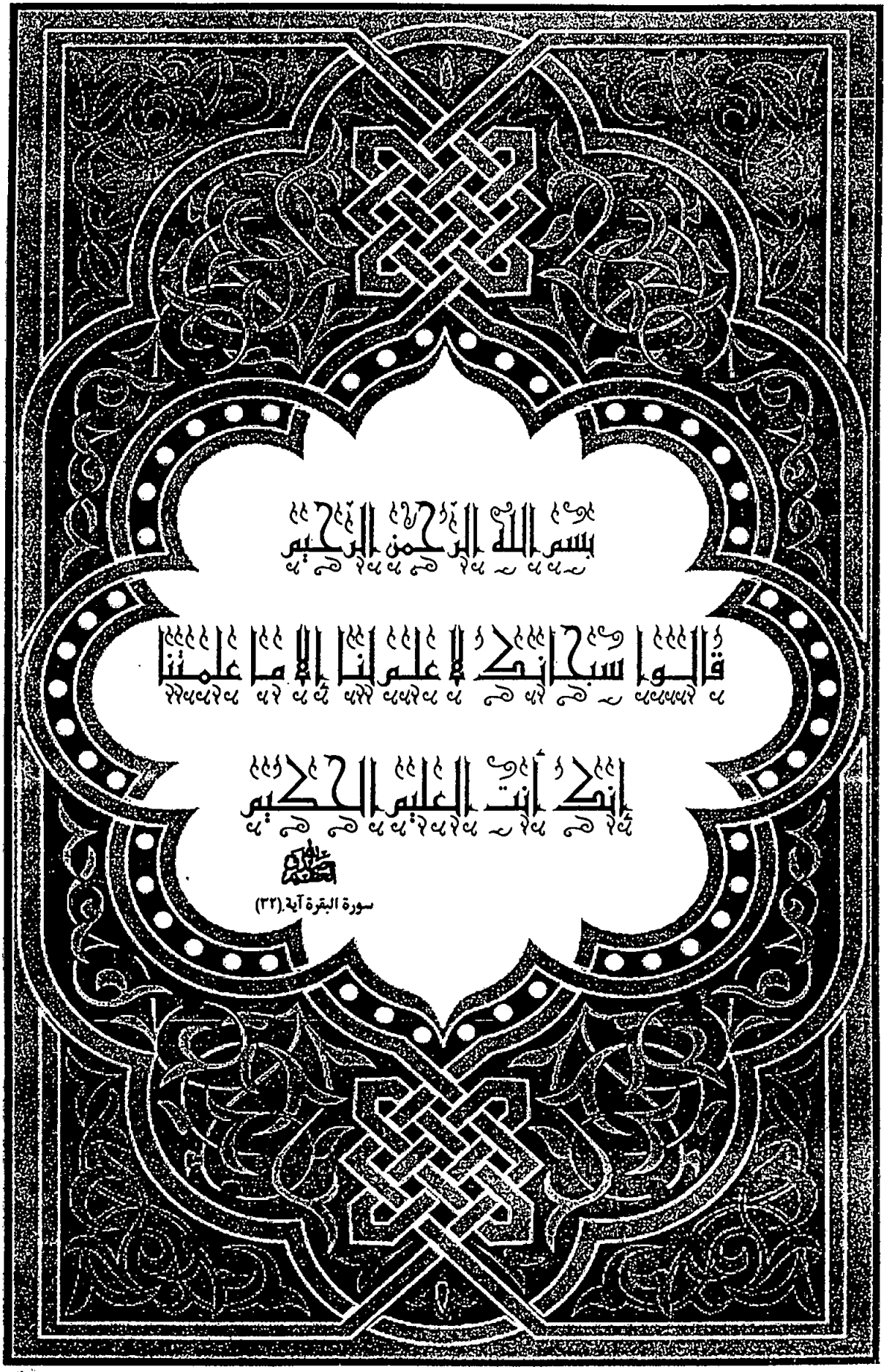
Under supervision of

Prof. Dr. MOHAMED O. I. REFAIE
Prof. Of Biochemistry
Lab. of Biochemistry
Faculty of science
Cairo University

Dr. MOHAMED ALY EL-DESOUKY
Lecturer Of Biochemistry
Lab. of Biochemistry
Faculty of science
Cairo University

Dr. AHMED IBRAHIM AMIN
Lecturer Of Biochemistry
Lab. of Biochemistry
Faculty of science
Cairo University

Faculty of Science
Cairo University
2005


بسم الله الرحمن الرحيم
قالوا سبحانك لا علم لنا إلا ما علمتنا
إنك أنت العليم الحكيم
صدق الله العظيم
سورة البقرة آية (٣٢)

APPROVAL SHEET FOR SUBMISSION

Title of (master) thesis: DISTURBANCE OF SOME ELECTROLYTES AND TRACE ELEMENTS BEFORE AND AFTER HEMODIALYSIS IN RENAL FAILURE AND TRANSPLANTED PATIENTS.

Name of the candidate: Sayeda Hamad Abd El Hamid

This thesis has been approved for submission by the supervisors:

1- Prof. Dr. Mohamed O.I. Refaie.

Signature:

2- Dr. Mohamed Aly El-Desouky

Signature:

3- Dr. Ahmed Ibrahim Amin

Signature:

Prof. Dr. Rifaat H. Hilal

Chairman Of Chemistry Department

Faculty Of Science Cairo University.

APPROVAL SHEET FOR SUBMISSION

Title of (master) thesis: DISTURBANCE OF SOME ELECTROLYTES AND TRACE ELEMENTS BEFORE AND AFTER HEMODIALYSIS IN RENAL FAILURE AND TRANSPLANTED PATIENTS.

Name of the candidate: Sayeda Hamad Abd El Hamid

This thesis has been approved for submission by the supervisors:

1- Prof. Dr. Mohamed O.I. Refaie.

Signature:

2- Dr. Mohamed Aly El-Desouky

Signature:

3- Dr. Ahmed Ibrahim Amin

Signature:

Prof. Dr. Rifaat H. Hilal

Chairman Of Chemistry Department

Faculty Of Science Cairo University.

ABSRTRACT

Name: Sayeda Hamad Abd El Hamid

Title of Thesis:

DISTURBANCE OF SOME ELECTROLYTES AND TRACE ELEMENTS BEFORE AND AFTER HEMODIALYSIS IN RENAL FAILURE AND TRANSPLANTED PATIENTS.

Degree (Master) Thesis, Faculty Of Science, Cairo University, 2002/2003.

Renal failure is associated with a disturbance of some electrolytes and trace elements metabolism. The presence of renal failure contributed to the regulation of blood levels of phosphate and the excretion rate of potassium and sodium. Our study which consisted of a healthy control subjects (GI). Patients undergoing hemodialysis (HD) (GII), the same patients were classified under (GIIA) before HD & (GIIB) after HD, renal transplanted patients (GIII); aims to determine some electrolytes and trace elements in sera of these groups. Experimental data have shown singificant increase in sera magnesium (Mg); copper (Cu) and manganese (Mn) of patients after HD, as compared to the same patients before HD. A significant decrease in sera magnesium (Mg), was recorded in transplanted patients; while the level of manganese (Mn) was significantly elevated as compared with control group. Moreover, the level of serum cadmium (Cd) was significantly increased in patients before and after HD as compared with control group. On the other hand, the level of serum cadmium (Cd) in patients after HD was significantly decreased as compared to the same patients before HD. In addition, the level of sodium (Na); potassium (K); caldium (Ca) and phosphorus (P) in human sera were closely related to the renal failure.In conclusion, early monotoring of serum hemodialysis are important for abnormalities in patients undergoing hemodialysis are important for prevention any complications.

Key words: Magnesium , Cadmium , Manganese, Copper, Chronic Renal Failure.

Supervisors:

(1) Prof. Dr. Mohamed O.I. Refaie.

Signature:

(2) Dr. Mohamed Aly El-Desouky

Signature:

(3) Dr. Ahmed Ibrahim Amin

Signature:

Prof. Dr. Rifaat H. Helal

Chairman Of Chemistry Department

Faculty Of Science Cairo University.

ABSRTRACT

Name: Sayeda Hamad Abd El Hamid

Title of Thesis:

DISTURBANCE OF SOME ELECTROLYTES AND TRACE ELEMENTS BEFORE AND AFTER HEMODIALYSIS IN RENAL FAILURE AND TRANSPLANTED PATIENTS.

Degree (Master) Thesis, Faculty Of Science, Cairo University, 2002/2003.

Renal failure is associated with a disturbance of some electrolytes and trace elements metabolism. The presence of renal failure contributed to the regulation of blood levels of phosphate and the excretion rate of potassium and sodium. Our study which consisted of a healthy control subjects (GI). Patients undergoing hemodialysis (HD) (GII), the same patients were classified under (GIIA) before HD & (GIIB) after HD, renal transplanted patients (GIII); aims to determine some electrolytes and trace elements in sera of these groups. Experimental data have shown singificant increase in sera magnesium (Mg); copper (Cu) and manganese (Mn) of patients after HD, as compared to the same patients before HD. A significant decrease in sera magnesium (Mg), was recorded in transplanted patients; while the level of manganese (Mn) was significantly elevated as compared with control group. Moreover, the level of serum cadmium (Cd) was significantly increased in patients before and after HD as compared with control group. On the other hand, the level of serum cadmium (Cd) in patients after HD was significantly decreased as compared to the same patients before HD. In addition, the level of sodium (Na); potassium (K); caldium (Ca) and phosphorus (P) in human sera were closely related to the renal failure.In conclusion, early monotoring of serum hemodialysis are important for abnormalities in patients undergoing hemodialysis are important for prevention any complications.

Key words: Magnesium , Cadmium , Manganese, Copper, Chronic Renal Failure.

Supervisors:

(1) Prof. Dr. Mohamed O.I. Refaie.

Signature:

(2) Dr. Mohamed Aly El-Desouky

Signature:

(3) Dr. Ahmed Ibrahim Amin

Signature:

Prof. Dr. Rifaat H. Helal

Chairman Of Chemistry Department

Faculty Of Science Cairo University.

AKNOWLEDGEMENT

I would like to express my deep thanks and gratitude to professor Dr. Mohamed Osman Ibrahim Refaie, professor of biochemistry,labe of Biochemical Analysis, faculty of science, university of Cairo for his supervision, appreciated advice, and the facilities, he offered to carry out this work and sincere cooperation without, he this work would not have been possible.

I am also grateful and offer deep thanks to Dr. Mohamed Aly El-Desouky, lecturer of biochemistry, faculty of science, university of Cairo. And Dr. Ahmed Ibrahim Amin lecturer of biochemistry, faculty of science, university of Cairo.For their supervisions, valuable suggestions, encouragement and all possible help, they kindly offered throughout the course of this work.

Great thanks also to Dr. Mohamed masoad, the general manger of Omm El-Massryeen laboratory, for his cooperation encouragement and all possible help.

I would like to express my deep thanks and gratitude to Dr. Mohamed Abd El-Aziz, the general maneger of Omm El-Massryeen Hospital, El Tammin El sehy , for his encouragement

And the facilities and all possible help.

Especial appreciation is expressed to my parents, brothers and sisters for their patience, and understanding which encouraged me throughout this study.

CONTENTS

LIST OF ABBREVIATIONS

CRF	chronic renal failure
GFR	glomerular filtration rate
BUN	blood urea nitrogen
P(cells)	principal cells
I(cells)	intercalated cells
ESRD	end stage renal failure
ARF	acute renal failure
ATN	acute tubular necrosis
CCPD	continuous cyclic peritoneal dialysis
CAPD	continuous ambulatory peritoneal dialysis
IPD	intermittent peritoneal dialysis
ECC	extracorporeal circuit
HLA	human leukocyte antigens
SOD	superoxide dismutase
PCA	principal component analysis
NPC	nasopharyngeal cancer
ESADDI	estimated safe and adequate dietary intake
TPN	Total parenteral nutrition
Mg-prot.	protein – bound magnesium
iMg^{+2}	ionized magnesium
Mg compl.	magnesium complexed with anions
Mg ultr.	ultrafiltrable magnesium
ROD	renal osteodystrophy
BMg	bone magnesium
DMg	dialysate magnesium
SMg	serum magnesium
FRTR	feline renal transplant recipients
WHO	world health organization
NAG	N - acetyle – glucosaminidase
GSH-Px	Glutathione peroxidase