

بسم الله الرحمن الرحيم

$\infty\infty\infty$

تم عمل المسح الضوئي لهذة الرسالة بواسطة / سامية زكى يوسف

بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

اتوتكنوبوج

ملاحظات:

- بالرسالة صفحات لم ترد بالأصل
 - بعض الصفحات الأصلية تالفة
- بالرسالة صفحات قد تكون مكررة بالرسالة صفحات قد تكون مكررة
 - بالرسالة صفحات قد يكون بها خطأ ترقيم

STUDY OF BONE DENSITY: AN AFTER EFFECT OF CHRONIC TREATMENT WITH ANTIEPILEPTIC DRUGS IN EPILEPTIC CHILDREN

Thesis Submitted for Fulfillment of Ph.D in Childhood Studies

By
Khaled Ahmed Yehia El Kholy
M.B.B.Ch , M.Sc. (Ped)

Under Supervision by

Prof. Dr. Sanaa Youssef Shaban

Professor of pediatrics Faculty of Medicine - Ain Shams University

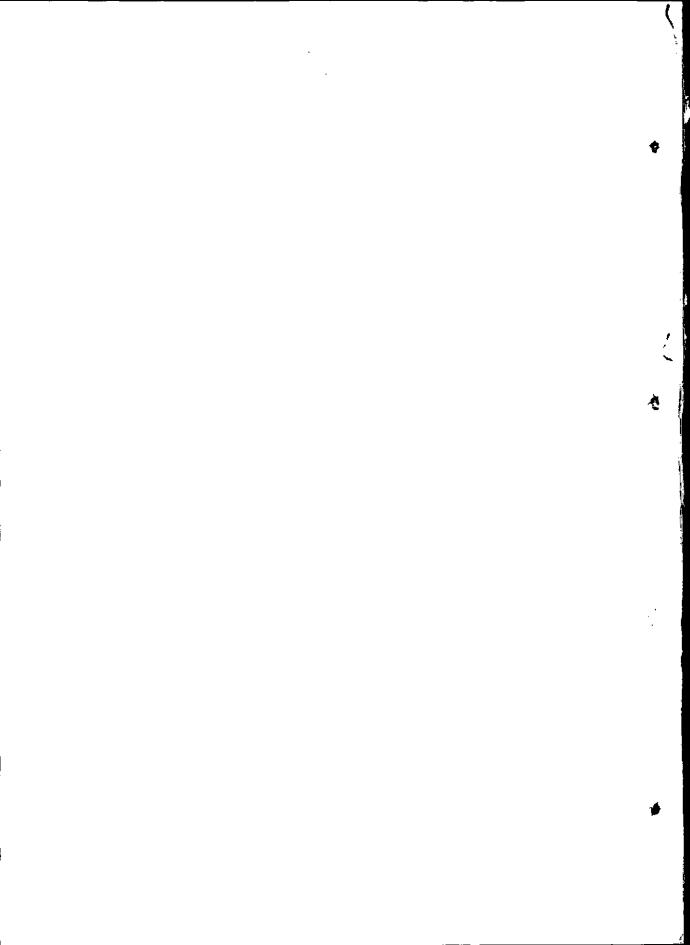
Dr. Khaled Hussien Taman

Ass. Professor in Medical Departement Postgraduate Institute of Childhood Studies Ain Shams University.

Dr. Nevin Mostafa Ebrahim

Ass. Professor of Radiodiagnosis
Faculty of Medicine - Ain Shams University .

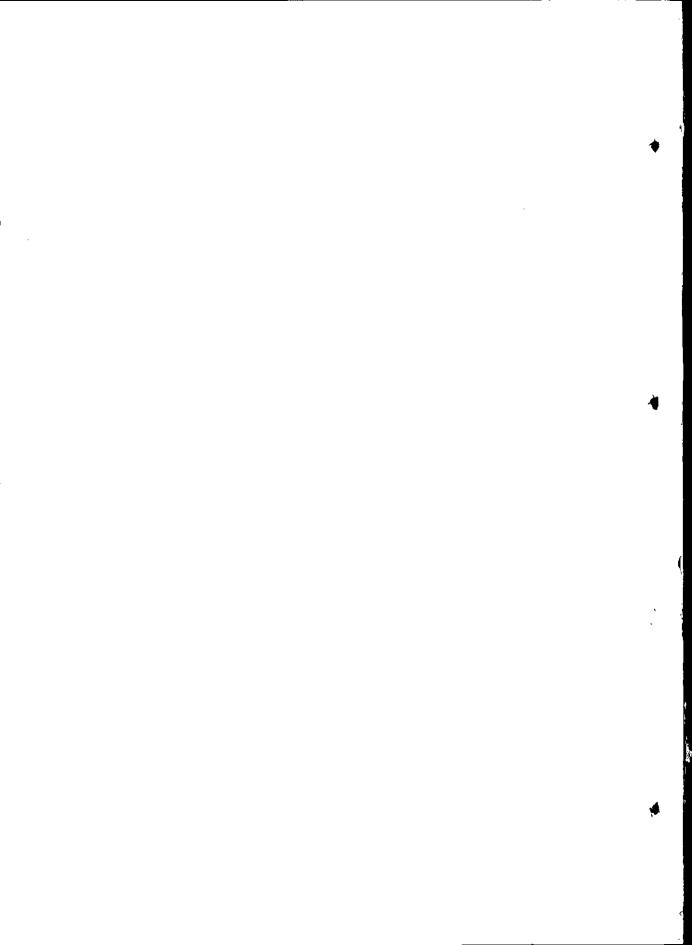
Postgraduate Institute of Childhood Studies
Medical Department
Ain Shams University
2000





خانام المانة الماخلا الالماخلا المحكيم المائد المائد المائد المائد المائد إذا إذا المحكيم الخاب المحليم المحكيم

صدى الله العظيم سورة البقرة، آية ٣٢

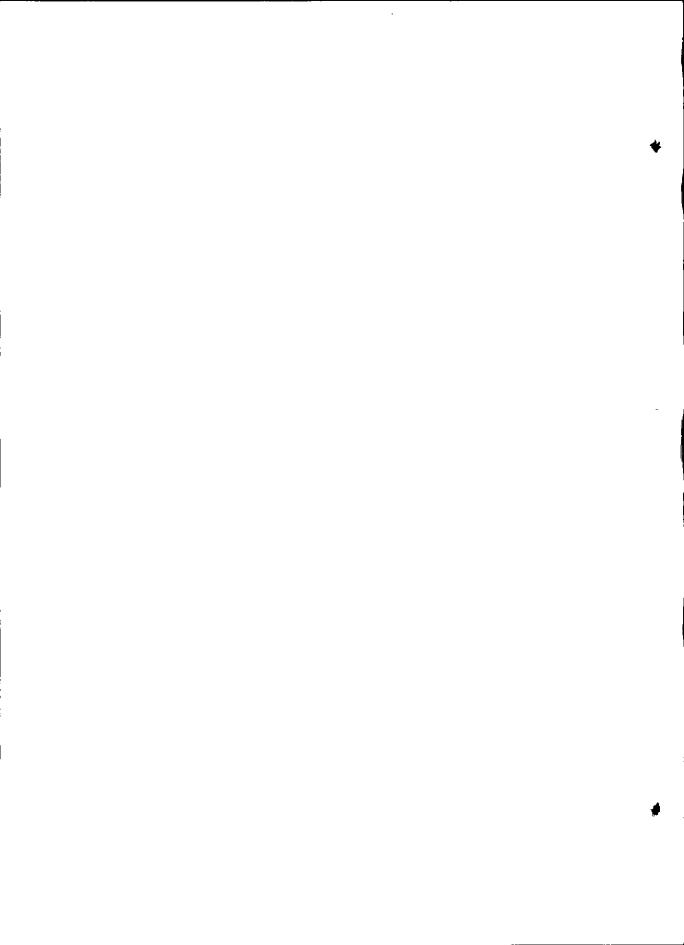




Declation

Dedicated
To
My Family





ACKNOWLEGEMENT

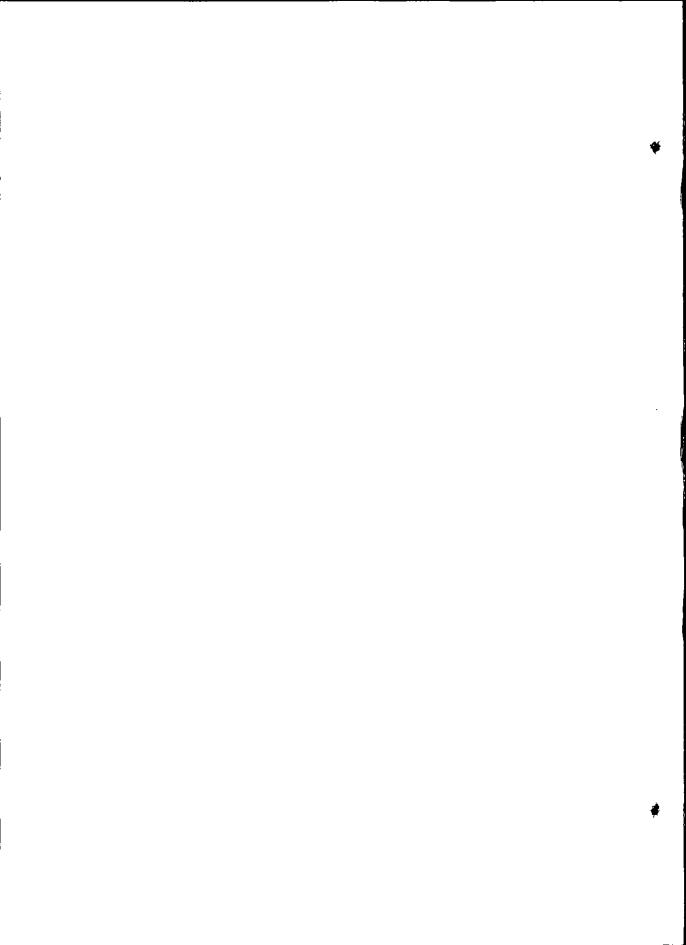
I would like to express my deepest thanks and profound gratitude to Prof. Dr. Sanaa Y. Shaban , Professor of Pediatrics , Ain Shams University . It was such a great honor to work under her kind guidance. Her continuous help , combined with her sincere support obliged me to bear the responsibility towards this study .

I am sincerely thankful to Dr. Khaled H. Taman, Ass. Prof. In Medical Department, Postgraduate Institute of Childhood Studies, Ain Shams University for sharing his expertise and valuable time, for his helpful suggestions and continuous, interest through out the course of this work. Any attempt to define my indebtedness to him would be far from complete.

I am very grateful to Dr. Nevine M. Ibrahim, Ass. Prof. of Radiodiagnosis, Ain Shams University for her invaluable assistance and guidance in the realization of this work.

I am greatly indebted to Prof. . Dr. Omar H Omar, Professor of Radiodiagnosis, Ain Shams University. To him, I owe much more than I could express and much less than I could repay except in part by the satisfaction of seeing this thesis come true.

Finally I would like to convey my warmest gratitude to my professors, my patients, their families and the nursing staff of the pediatric neurology clinic, Ain Shams University for their thankful cooperation.



LIST OF ABBREVIATIONS

AA Amino acid.

AED_S Antiepileptic drugs.

ACTH Adrenocorticotrophic hormone..

Alk.Phos. Alkaline phosphatase.

AMP Adenosine monophosphate.
ATP Adenosine triphosphate.
BMC Bone mineral content.
BMD Bone mineral density.

BZP Benzodiazepine.

Ca Calcium.

CAE Childhood absence epilepsy.

CBZ Carbamazepine.

CCB_S
CNS
Central nervous system.
CPS
Complex partial seizures.
CT
Calcium channel blockers.
Central nervous system.
Complex partial seizures.

DEXA Dual energy x-ray absorptiometry

DNA Deoxyribonucleic acid.

DPA Dual photon absorptiometry.

DPH Diphenyl hydantoin.

ESM Ethosuximide.

EEG Electroencephalogram.

Fig Figure.

GABA γ - amino butyric acid.

GAD Glutamic acid decarboxylase.

GTCS Generalized tonic-clonic seizures.
GTCS Generalized tonic-clonic convulsions

HS Highly significant.

Ht Height.

IGE Idiopathic generalized epilepsy.

ILAE International League Against Epilepsy

JAE Juvenile absence epilepsy.

JME Juvenile myoclonic epilepsy.

K Potassium.KA Kainic acid.

MCT Medium chain triglycerides.
MEG Magnetoencephalogram.

Mg Magnesium.

MRI Magnetic resonance imaging.

Na Sodium.

NMDA
No Number of subjects.
NS Non significant.
OD Optical density.
P Phosphorus.
PB Phenobarbitone.

PET Positron emission tomography.

PHT Phenyl hydantoin.

PICP Procollagen type I-carboxyl terminal

peptide.

PRM Primidone.

PTH Parathyroid hormone.

S Significant.

SD Standard deviation.
SE Status epilepticus.

SPECT Single photon emission computerized

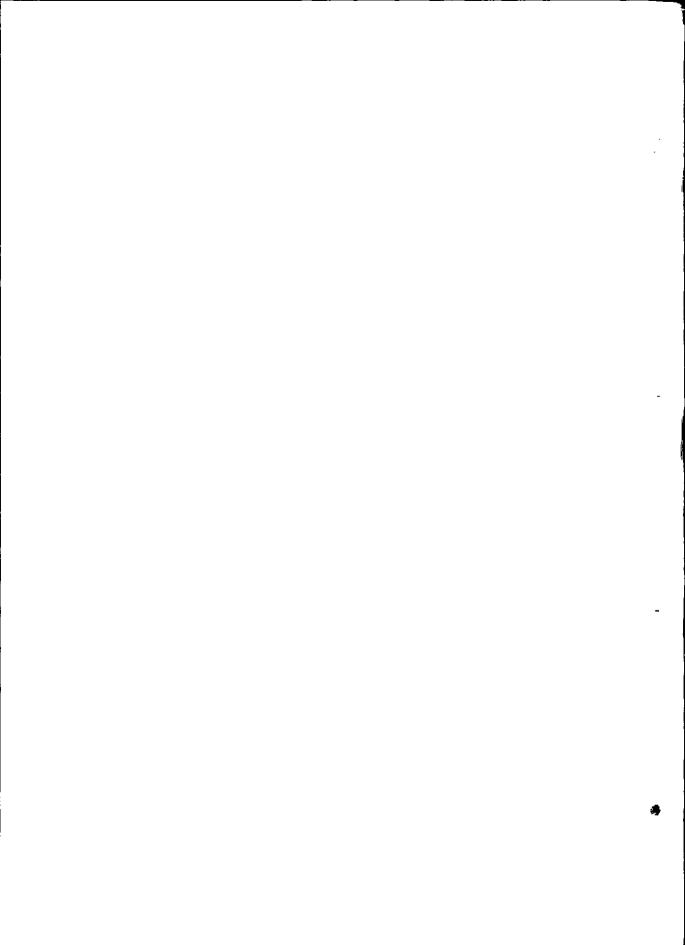
tomography.

SPS Simple partial seizures
VNS Vagus nerve stimulation.

VPA Valproic acid. V/V Volume / volume.

TABLE OF CONTENTS

	Page
Chapter 1: Introduction	1
Chapter 2: Aim of the work	3
Chapter 3: Review of Literature	4
1. Epilepsy	4
2. Bone metabolism	74
3. Antiepileptics and Bone Mineral	91
Density	
Chapter 4: Patients and Methods	111
Chapter 5: Results	128
Chapter 6: Discussion	153
Chapter 7: Summary and Conclusion	162
Chapter 8: Recommendations	165
Chapter 9: References	166
Arabic summary	



List of Tables

Table	Comment	Page
Table 1	Etiology of seizures in childhood	10
Table 2	The ILAE classification of seizure type	17
Table 3	The ILAE classification of the epilepsies and	25
	epilepsy syndromes	
Table 4	Main epileptic syndromes in childhood and	27
	adolescence	
Table 5	Symptoms of nonepileptic paroxysmal disorders	47
Table 6	Antiepileptic drugs for different seizure types	50
Table 7	Antiepileptic drugs (in alphabetical order)	62
Table 8	Recent antiepileptic drugs	66
Table 9	Possible roles for new AEDs	68
Table 10	Methods for in vivo assessment of bone mineral	87
Table 11	Collective data of patients group	129
Table 12	Collective data of control group	131
Table 13	Comparison of patients as regards the age	132
Table 14	Comparison between patients and control groups	133
Table 15	Comparison between mean levels of	137
	anthropometric measures, biochemical results and	
	Z score of the 4- studied groups.	
Table 16	Comparison between polytherapy vs monotherapy	141
	groups	
Table 17	Effect of duration of drug therapy on patients	145
	groups	
Table 18	Chi – squre test (BMD vs therapy).	147
Table 19	Comparison between patients and control groups	148
	on the view of BMD results.	
Table 20	Percentage frequency of positive bone resorption	149
	by BMD versus biochemical results.	
Table 21	Percentage positivity of BMD compared to	150
	antiepileptic biochemical osteomalacia in patients	
	groups.	

