

Effectiveness Of Carbamazepine In Treatment Of ADHD In Children with EEG abnormalities

Theses submitted for fulfillment of Master Degree in childhood studies

(Caring of Children with Special Needs)

Department of Medical Studies for Childhood

By

Sara Ali Ahmed Galal

MB.B.CH

Ain Shams University

Under supervision of

Dr. Safeya Mahmoud Effat

Dr. Olweya Mohamed Abdel Baky

Professor of psychiatry

Professor of child psychiatry

Faculty of medicine

Institute Of Post Graduate Childhood Studies

Ain Shams University

Ain Shams University

Institute of post graduate childhood studies

Ain Shams University

2017

(وَقُل رَّبِّ زِدْنِي عِلْمًا)

سورة طه الآية ١٤٤

Dedication

To my parents, who taught me to live, think and learn

To my husband, Abdullah, who has been a constant source of support and encouragement.

To my beloved kids, Mohamed & Yassin

Acknowledgment

First and foremost, I would like to thank **God**, whose many blessings have made me who I am.

I would like to express my sincere gratitude to Prof. Dr. Olweya Mohamed Abdel Baky, Professor of child psychiatry, Institute Of Post Graduate Childhood Studies, Ain Shams University, for her involvement and active support throughout the study years. I greatly appreciate her warm encouragement and thoughtful guidance.

I am deeply grateful in expressing my sincere gratitude for Prof. Dr. Safeya Mahmoud Effat, Professor of psychiatry, Faculty of medicine, Ain Shams University, for her great help, valuable time, unlimited assistance and scientific supervision that enabled me to accomplish this study. Thank you.

I also wish to express my great thanks to all my colleagues who helped me in sample collection.

LIST OF CONTENTS

| Abstract1 |
|------------------------|
| Introduction2 |
| Aim of the study6 |
| Review of literature7 |
| Patients and methods51 |
| Results57 |
| Discussion76 |
| Recommendations88 |
| Summery89 |
| References91 |
| Appendix139 |
| Arabic summary |

LIST OF TABLES

| Table No. | Title | Page |
|--------------|---|------|
| 1 | Demographic data | 57 |
| 2 | Pre-natal risk factors | 59 |
| 3 | Natal and post-natal history | 60 |
| 4 | Child development | 61 |
| 5 | Clinical data | 61 |
| 6 | Demographic data of CBZ treated patients | 63 |
| 7 | Pre-natal history of CBZ treated patients | 65 |
| 8 | Natal and post-natal history of CBZ treated patients | 66 |
| 9 | Child development of CBZ treated patients | 66 |
| 10 | Clinical data of CBZ treated group | 67 |
| 11 | Scores of ADHD scale IV before Carbamazepine treatment | 69 |
| 12 | ADHD scale IV scores after treatment with carbamazepine | 70 |
| 13 | ADHD scores before and after treatment with carbamazepine | 71 |
| 14 | side effects of CBZ | 75 |

LIST OF FIGURES

| Fig. | Title | page |
|------|--|------|
| 1 | steps for sample selection of the study | 56 |
| 2 | Sex distribution of patients | 58 |
| 3 | ADHD subtype in the whole sample | 62 |
| 4 | Sex distribution of CBZ treated patients | 64 |
| 5 | ADHD subtypes in CBZ treated sample | 68 |
| 6 | ADHD scale before and after treatment | 72 |
| 7 | Inattentive score before and after treatment | 73 |
| 8 | hyperactivity score before and after treatment | 74 |

LIST OF ABBREVIATIONS

| 5HTT | Carrier Protein Involved In Serotonin Reuptake |
|---------|---|
| ADHD | Attention Deficit Hyperactivity Disorder |
| ADHD RS | The ADHD Rating Scale |
| ADRA2A | The Adrenergic Alpha Receptors 2A |
| ASD | Autism Spectrum Disorder |
| CAM | Complementary And Alternative Medicine Treatments |
| CBZ | Carbamazepine |
| CD | Conduct Disorder |
| CNVs | Copy Number Variation |
| DAP | Dialkyl Phosphate |
| DAT1 | Carrier Protein Involved In Dopamine Reuptake |
| DBH | Dopamine Beta Hydroxylase Gene |
| DRD4 | Dopamine D4 Receptor |
| DRD5 | Dopamine D5 Receptor |
| DSM | Diagnostic And Statistical Manual Of Mental Health Disorders |
| EEG | Electroenchephalography |
| FDA | United States Food And Drug Administration |
| GWAS | Genome-Wide Association Studies |
| HLA | Human Leukocyte Antigen |
| HTR1B | Serotonin 1B Receptor |
| IQ | Intelligent Quotient |
| MPH | Methylphenidate |
| MRI | Magnetic Resonance Imaging |
| NEBA | Neuropsychiatric EEG-Based Assessment Aid |
| PCBs | Polychlorinated Biphenyls |
| SNAP25 | Gene Involved In Neurotransmission And Neuronal Plasticity |
| SNPs | Single Nucleotide Polymorphisms |
| SPSS | Statistical Package For Social Science |
| TPH2 | Tryptophan Hydroxylase Gene |