



شبكة المعلومات الجامعية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



شبكة المعلومات الجامعية
@ ASUNET



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكرو فيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد أعدت دون أية تغيرات



يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

To be Kept away from Dust in Dry Cool place of
15-25- c and relative humidity 20-40%

بعض الوثائق الأصلية تالفة

بالرسالة صفحات لم ترد بالاصل

B E V E A

Effect of L-Carnitine Supplementation in Valproic Acid Intoxication

Handwritten signature and initials.

Thesis

**Submitted for the partial fulfillment of MD degree in
Clinical Toxicology**

Presented by:

Taymour Mohamed Mohamed

M. B., B.ch; M. Sc. (Clinical Toxicology)

Supervised by:

Prof. Dr. Ahmed Kamel Mashhour

*Professor of Forensic Medicine and Clinical Toxicology
Faculty of Medicine, Ain Shams University*

Prof. Dr. Seham Fouad Abd El-All

*Professor of Forensic Medicine and Clinical Toxicology
Faculty of Medicine, Ain Shams University*

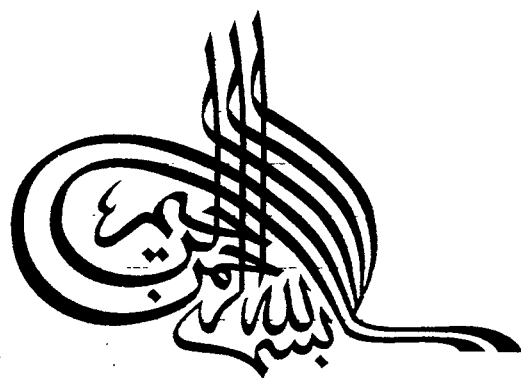
Prof. Dr. Hoda Mohamed Mahmoud Mostafa

*Assistant Professor of Anatomy
Faculty of Medicine, Ain Shams University*

Dr. Einas Abul-Wafa El-Taftazani

*Lecturer of Forensic Medicine and Clinical Toxicology
Faculty of Medicine, Ain Shams University*

Faculty of Medicine
Ain Shams University
2001



Acknowledgment

First and foremost thanks to God. I would like to express my deep gratitude and appreciation to **Prof. Dr. Ahmed Kamel Mashhour**, professor of Forensic Medicine and Clinical Toxicology, Faculty of Medicine, Ain Shams University for his interest, patience and for giving me much of his precious time. I feel indebted to him for his valuable advice and kind support which enable me to overcome the various difficulties during this work

I am also extremely grateful to **Prof. Dr. Seham Fouad Abd El-All**, professor of Forensic Medicine and Clinical Toxicology, Faculty of Medicine, Ain Shams University for her unlimited support, advises and careful revision of this work. Her close supervision, patience and effort were behind this work.

My sincere thanks and respect are due to **Prof. Dr. Hoda Mohamed Mahmoud**, professor of Anatomy, Faculty of medicine, Ain Shams University for the tips and guidance that she gave me throughout the work.

Special thanks are expressed to **Dr. Einas Abul-Wafa El-Taftazani**, Lecturer of Forensic Medicine and Clinical Toxicology, Faculty of Medicine, Ain Shams University for her active participation, effective help and enthusiastic cooperation.

Very special thanks go to the staff members of forensic medicine and clinical toxicology department, Ain Shams University, especially **Prof. Dr. Sawsan Aabdel Fattah** head of the department for their continuous encouragement and support.

Taymour Mohamed

List of Contents

	<u>Page</u>
• Introduction.....	1
• Aim of the work.....	2
• Review of literature	
- <i>Valproic acid</i>	4
- <i>Carnitine</i>	44
• Methodology.....	69
• Results.....	86
- <i>Tables</i>	110
- <i>Histograms</i>	131
- <i>Histology</i>	165
• Discussion.....	227
• English summary and Recommendations.....	240
• References.....	246
• Arabic summary	

List of Tables

Page

- 22 **Table (a):** The international League Against Epilepsy Classification of Epileptic Seizures.
- 51 **Table (b):** Carnitine Concentration of Selected Human Tissues.
- 110 **Table (1):** Effects of VPA Administration (1000 mg/kg as a Single Dose) – (Group I-c) on Serum Ammonia, Total Bilirubin, AST, ALT, Alkaline Phosphatase, Amylase, Urea, Creatinine, CPK and LDH in Comparison to The Control Group (Group I-a)
- 111 **Table (2):** Effects of VPA Administration (1000 mg/kg as a Single dose) Together with L-Carnitine (200 mg/kg) – (Group I-d) - on Serum Ammonia, Total Bilirubin, AST, ALT, Alkaline Phosphatase, Amylase, Urea, Creatinine, CPK and LDH in Comparison to The Control Group (Group I-a)
- 112 **Table (3):** Effects of Recovery Period (Group I-e) After VPA Administration (1000 mg/kg as a Single dose) on Serum Ammonia, Total Bilirubin, AST, ALT, Alkaline Phosphatase, Amylase, Urea, Creatinine, CPK and LDH in Comparison to The Control Group (Group I-a)
- 113 **Table (4):** Effects L-Carnitine Administration (200 mg/kg as a Single dose) - (Group I-f) - on Serum Ammonia, Total Bilirubin, AST, ALT, Alkaline Phosphatase, Amylase, Urea, Creatinine, CPK and LDH in Comparison to The Control Group (Group I-a)
- 114 **Table (5):** Comparison Between Negative Control Group (Group I-a) and Positive Control Group (Group I-b) Regarding Serum Ammonia, Total Bilirubin, AST, ALT, Alkaline Phosphatase, Amylase, Urea, Creatinine, CPK and LDH.

- 115 **Table (6):** Effects of VPA Administration (500 mg/kg/day in Two Divided Doses) for Seven Days (*Group II-c*) on Serum Ammonia, Total Bilirubin, AST, ALT, Alkaline Phosphatase, Amylase, Urea, Creatinine, CPK and LDH in Comparison to The Control Group (*Group II-a*)
- 116 **Table (7):** Effects of VPA Administration (500 mg/kg/day in Two Divided Doses) Together with L-Carnitine (200 mg/kg/Day in Two Divided Doses) for Seven Days (*Group II-d*) - on Serum Ammonia, Total Bilirubin, AST, ALT, Alkaline Phosphatase, Amylase, Urea, Creatinine, CPK and LDH in Comparison to The Control Group (*Group II-a*)
- 117 **Table (8):** Effect of Recovery (*Group II-e*) on Serum Ammonia, Total Bilirubin, AST, ALT, Alkaline Phosphatase, Amylase, Urea, Creatinine, CPK and LDH After VPA Administration (500 mg/kg/day in Two Divided Doses)) for Seven Days (*Group II-d*) in Comparison to The Control Group (*Group II-a*)
- 118 **Table (9):** Effects L-Carnitine Administration (200 mg/kg/Day in Two Divided Doses) for Seven Days (*Group II-f*) on Serum Ammonia, Total Bilirubin, AST, ALT, Alkaline Phosphatase, Amylase, Urea, Creatinine, CPK and LDH in Comparison to The Control Group (*Group II-a*)
- 119 **Table (10):** Comparison Between Negative Control Group (*Group II-a*) and Positive Control Group (*Group II-b*) Regarding Serum Ammonia, Total Bilirubin, AST, ALT, Alkaline Phosphatase, Amylase, Urea, Creatinine, CPK and LDH.
- 120 **Table (11):** Effects of VPA Administration (500 mg/kg/day in Two Divided Doses) for Fourteen Days (*Group III-c*) on Serum Ammonia, Total Bilirubin, AST, ALT, Alkaline Phosphatase, Amylase, Urea, Creatinine, CPK and LDH in Comparison to The Control Group (*Group III-a*)