Platele unctions In Treated ptic Children

A Thesis

Submitted for partial fulfillment of M.Sc. degree in Pediatrics

By

Niveen Yousef Mahmoud

(M.B., B.CH)

6/8 92853

Supervised by

Professor Dr. Hamid Shatla

Professor of Pediatrics

Ain Shams University,

Dr. Hoda Lotfy

Assistant Professor of Pediatrics Ain Shams University

Professor Dr. Niveen Ahmed Kassem

Professor of Clinical Pathology Ain Shams University

Faculty of Medicine - Ain Shams University 1998

60137

J.





Acknowledgment

First and for most, thanks are all to Allah.

I would like to express my deep gratitude and sincere appreciation to **Prof. Dr. Hamed Shatla**, Professor of Pediatrics, Faculty of Medicine, Ain Shams University. For giving me the privilege of working under his supervision. I wish to express my thanks and cordial appreciation to him for his guides and continuous support.

I am also greatly indebted to **Dr. Hoda Lotfy**, Assistant Professor of Pediatric, Faculty of Medicine, Ain Shams University, for her kind patience, sincere help and for her great cooperation and assistance throughout the whole period of this study.

I would further like to express my deep appreciation to **Prof. Dr. Niveen Ahmed Kassem**, Prof. Of Clinical pathology, Faculty of Medicine, Ain Shams University, for her guides and support in the laboratory work in this study.

Thanks are due to **Dr. Adel El Messery**, Professor of Paracytology, Medical Research Center for his assistance, help and valuable advice in the laboratory work of this thesis.

Also, I would like to thank my family, Specially my sister and all my Friends who were in response of word processing and designing this study.

I wish to thank the patients and their parents for being cooperative. Lastly sincere appreciation is extended to everybody who have shared in a way or another in the performance of this work.

Niveen Yousef Mahmoud

List of Tables

Table	Title	Page
No.		
1.	International classification of epileptic seizures ILAE, 1989	4
2.	Drug choice in children & adolescents	38i
	classified by seizure type & epilepsy syndrome	
3.	Principal pharmacokinetics interaction with	38ii
4.	Antiepileptic drugs. Platelets granules contents	41
<i>5</i> .	Epidemiological data of all studied groups	70
6.	Mean therapeutic data of groups A &B.	72
<i>7</i> .	Mean hematological data of all studied	72
8.	groups. Sex difference between mean %of	73
	aggregation with ADP (different conc.) &collagen and B.T. in group C	
9.	Mean % of aggregation &B.T in focal Vs generalized epilepsy in group B.	74
10	Mean platelets count and BT in groups A and C	77
11	Mean % of aggregation with ADP &	77
12	collagen in groups A and C Mean platelets count and BT in groups	<i>78</i>
	Band C	
13	Mean % of aggregation with ADP & collagen in groups B and C	79
14	Mean platelets count and BT in group A and	<i>79</i>
14	B	/9
15	Mean % of aggregation with ADP &	80
	collagen in groups A and B	

Table No.	Title	Page
16	Correlations between mean % of aggregation &platelets count to dose, drug level and duration of therapy in group A	82
17	Correlations between mean % of aggregation & platelets count to VPA levels in group B	85
18	Recent antiepileptic drugs.	Appendix (I)

List of Figures

Fig.	Title	Page
No.		
<i>1</i> .	Morphology of the platelets(T.S.)	39
2.	Release products of the platelets & their effects	45
3.	Platelets adhesion to the vessel wall.	51
4.	Platelets functions (adhesion, aggregation, release)	52
5.	Arachidonic and linoleic acids metabolisms by platelets and endothelium.	56
6. 7.	Principle of platelets aggregation test Normal aggregation curves with ADP&collagen	64
8.	Mean age difference in all studied groups	71
9.	Sex distribution among all studied groups	71
10	Comparison between male & female in group C as regard mean % of aggregation with ADP&collagen and B.T.	75
11	Comparison between focal & generalized types of epilepsy in group B as regard mean % of aggregation with ADP&collagen -B.T.	76
12	Mean % of aggregation with ADP& collagen all studied groups	81
13	Mean platelets count & BT in all studied groups	81
14	Abnormal aggregation curves in groups A&B	
15	Correlation: VPA level Vs ADP20 in group A	83
16	Correlation: VPA level Vs ADP10 in group A	83
17	Correlation: VPA level Vs ADP5 in group A	83
18	Correlation: VPA level Vs collagen in group A	83
19	Correlation: VPAduration Vs ADP20 in group A	84
20	Correlation: VPAduration Vs ADP10 in group A	84
21	Correlation: VPAduration Vs ADP5 in group A	84
22	Correlation: VPA duration Vs collagen in group A	84

Fig. No.	Title	Page
23	Correlation: VPA level Vs ADP20 in group B	85
24	Correlation: VPA level Vs ADP10 in group B	86
25	Correlation: VPA level Vs ADP5 in group B	86
26	Correlation: VPA level Vs collagen in group B	86
27	Correlation: platelets count VPA duration in group A	87
28	Correlation: platelets count Vs VPA level in group A	87
29	Correlation: platelets count Vs VPA level in group B.	87

List Of Abbreviations

ADH Anti-diuretic hormone
ADP Adenosine-diphosphate
AEDs Antiepileptic drugs
ATP Adenosine-triphosphate

B.T. Bleeding time
BTG B-thromboglobulin
BZDs Benzodiazepines
CBZ Carbamazepine
CLB Clobazam

CPS Complex partial seizure
CT Computerized Tomography
DHC Dihydro-hydroxy carbamazepine

EEG Electroencephalogram

ESM Ethosuximide FLB Felbamate

GABA Gamma-amino butyric acid GABA-T Gamma-amino butyric acid

Transaminase

GBP Gabapentin

GDP Guanosine diphosphate

GM-CSF Granulocyte-Macrophage colony

stimulating factor

Gps Glycoproteins

Generalized tonic clonic seizure

Guanosine triphosphate

12-HETE12-hydro-eicosatetraenoic acid.13-HODE13-hydroxy-octadecadienoic acid

IL-3 Interleukin-3 IL-6 Interleukin-6

IPSPs Inhibitory post synaptic potentials

LTG Lamotrigine μΜ micro-mole

NCLB N-desmethyl-clobazam

NEAD Non epileptic attack disorder

NMDA receptor N-methyle-D-aspartate receptor

OCBZ · Oxcarbazepine

PDGPPlatelets derived growth factorPETPositron emission tomography

PF4 Platelet factor 4
PG Prostaglandin
PHT Phenytoin

PPP Platalets poor plasma
PRP Platelets rich plasma

rCBF regional cerebral blood flow rCMR regional cerebral metabolism

SPD Storage pool disease

SPECT Single photon emission computed

Tomography

SPS Simple partial seizure

TGB Tiagabine
TPM Topiramate
TPO Thrombopoietin
TxA2 Thromboxane A2

VGP Vigabtrin VPA Valproic acid

vWF von-Willebrand Factor

Table of Contents.

Introduction and Aim of the work

Review of Literature

	Epilepsy	1
a	Antiepileptic Drugs	17
	The platelets	39

Subjects and Methods	61
Results	70
~· ·	

Discussion 88

Summary and conclusion 96
References 100

Appendix I (Recent AEDs)

Appendix II (Basic Pharmacokinetics of AED)

Appendix III (Data of the patients)

Arabic Summary

