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RESISTANCE TO ACTIVATED PROTEIN C IN CEREBROVASCULAR THROMBOTIC STROKE

Thesis

Submitted for Partial Fulfillment
of Ms.C. Degree in Clinical and Chemical Pathology

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ABSTRACT

Resistance to activated protein C is an inherited autosomal dominant coagulation abnormality that is increasingly recognized as an important etiology for thromboembolic disease and stroke in young adults. The aim of this work is to study the relation between APCR and stroke and to determine how frequently it's associated with factor V Leiden mutation. This study included 32 young stroke patients subjected to coagulometric method for APCR detection. The positive cases were submitted to DNA analysis for FV gene mutation. Results revealed 21.9% having APCR 51.9% of whom were proved to have the mutation. We concluded that APCR due to FVL mutation is considered as an etiology for venous and arterial thromboses causing cerebral ischaemia in young patients without other risk factors.

Key words: activated protein C resistance – thrombosis – stroke – young.

ACKNOWLEDGEMENT

First of all, thanks to GOD for helping me to complete this work.

Words will never be able to express my deepest gratitude to all those who helped me to make this work possible.

I would like to express my sincere appreciation, deepest feeling of gratitude and greatest love and respect to ***Prof. Dr. Azza Ahmed Mohamed***, Professor of Clinical and Chemical Pathology, Cairo University for her encouragement, advice and valuable instructions throughout this work.

I wish to thank ***Prof. Dr. Azza Abbas Helmy***, Professor of Neurology, Cairo University for her great efforts, patience, sincere devotion and experience she offered me to complete this work.

I am really indebted to ***Dr. Nessrine El Gharbawy***, Lecturer of Clinical and Chemical Pathology, Cairo University whose constant support, encouragement, her creative advice and meticulous supervision have been of great help in presenting this work.

I would also like to thank ***Dr. Mohamed El Sayed***, Lecturer of Neurology, Cairo University for the time he gave to this work, his effort and advice.

Special thanks to all my professors and colleagues for their great help and support.

Last, but not least, I would be happy to present this work to my family and especially my husband for their generous giving, love and sacrifice.

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LIST OF ABBREVIATIONS

A:	Adenine
AD:	Autosomal dominant
ADP:	Adenosine diphosphate
APC:	Activated protein C
APCR:	Activated protein C resistance
APTT:	Activated partial thromboplastin time
AR:	Autosomal recessive
Arg:	Arginine
ATP:	Adenosine triphosphate
ATIII:	Anti-thrombin III
bp:	base pair
C:	Cytosine
c AMP:	cyclic adenosine monophosphate
C ₄ bBP:	C ₄ b-binding protein
COOH:	Carboxy terminal
CT:	Computerized tomography
CVS:	Cerebrovascular stroke
DNA:	Deoxy ribonucleic acid
DVT:	Deep venous thrombosis
ECs:	Endothelial cells
EDRF:	Endothelial-derived relaxing factor
EDTA:	Ethylenediamine tetra-acetic acid
EGF:	Epidermal growth factor
ELISA:	Enzyme-linked immunosorbant assay
FDPs:	Fibrin degradation products
FSPs:	Fibrin split products
FV:	Factor V
FVa:	Activated factor V
FVL:	Factor V Leiden
FVII:	Factor VII
G:	Guanine
gla:	γ -carboxy glutamic acid
Gln:	Glutamine
GP:	Glycoprotein
HCII:	Heparin cofactor II
HMWK:	High molecular weight kininogen
IL-I:	Interleukin-I
Kb:	Kilo base

LACI:	Lipoprotein associated coagulation inhibitor
Lys:	Lysine
mM:	milli Mole
Mr:	Molecular weight
mRNA:	messenger ribonucleic acid
NH ₂ :	Amine terminal
PACI:	Partial anterior circulation infarction
PAI:	Plasminogen activator inhibitor
PCR:	Polymerase chain reaction
PGI ₂ :	Prostacyclin
PI:	Phosphatidyl inositol
PL:	phospholipids
POCI:	Posterior circulation infarction
PROC gene:	Protein C gene
PTT:	Partial thromboplastin time
Q:	Glutamine
R:	Arginine
SDS:	Sodium dodecyl sulphate
SEM:	Subendothelial microfibrils
SERPINS:	Serine protease inhibitors
T:	Thymine
TACI:	Total anterior circulation infarction
TF:	Tissue factor
TFPI:	Tissue factor pathway inhibitor
TM:	Thrombomodulin
TNF:	Tumour necrosis factor
UPA:	Urokinase plasminogen activator
VC:	Vasoconstriction
VKD:	Vitamin K dependent
vWF:	von Willebrand factor