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شبكة المعلومات الجامعية

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Factor VIII and von-Willebrand Factor in Ischaemic Heart Disease: A Comparative Study and Correlation with Lifestyle

Thesis

Submitted for partial fulfillment of the Master Degree
in Internal Medicine

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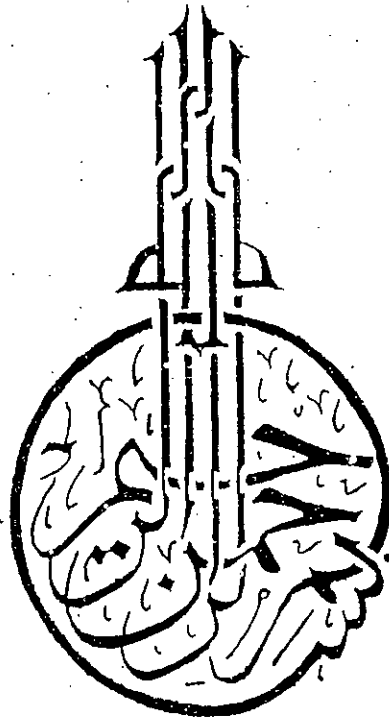
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Assiut University

2003



« نَرْفَعُ دَرَجَاتٍ مِّنْ نَّشَأِهِ »

وَفَوْقَ كُلِّ ذِي عِلْمٍ

عَلِيمٌ
صَدَقَ اللَّهُ الْعَظِيمُ

الآية ٢٦ من
سورة يوسف



Dedication

To ..

My Late Parents,

My brothers & sisters,

and

To my Lovely Fiancé

Ismail 

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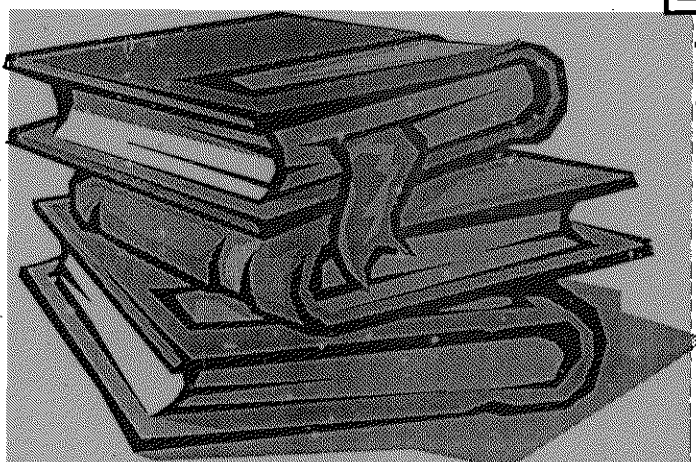
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List of Abbreviations

ADP	Adenosine diphosphate
AMI	Acute myocardial infarction
APC	Activated protein C
aPTT	Activated partial thromboplastin time
ARIC study	Atherosclerosis Risk in Communities study
ATP	Adenosine triphosphate
BMI	Body mass index
CPK	Creatine phosphokinase
DDAVP	1-deamino-8-D-arginine vasopressin
ECG	Electrocardiogram
EDTA	Ethylene diamine tetra acetic acid
ELISA	Enzyme-linked immunosorbent assay
FVIII	Factor VIII
FVIII:C	Factor VIII coagulant activity
GAIT study	Genetic Analysis of Idiopathic Thrombosis study
HB	Haemoglobin
HDL-c	High density lipoprotein cholesterol
IHD	Ischaemic heart disease
LDL-c	Low density lipoprotein cholesterol
Met	Methionine
NQWMI	non Q wave myocardial infarction
PC	Prothrombin concentration
PPP	Platelet poor plasma
PRP	Platelet rich plasma
PT	Prothrombin time
QWMI	Q wave myocardial infarction
TF	Tissue factor
Tyr	Tyrosine
vWF Ag	von Willebrand factor antigen
WBCs	White blood cells

INTRODUCTION
&
AIM OF THE WORK

Introduction and Aim of The Work

Ischaemic heart disease (IHD) is one of the causes of premature death worldwide. It is a form of heart disease whose primary manifestations result from myocardial ischaemia due to atherosclerotic coronary artery disease. This term encompasses a spectrum of patients ranging from the asymptomatic preclinical phase to acute myocardial infarction (AMI) and sudden death (Braunwald et al, 2000). It includes stable angina, unstable angina and AMI. Stable angina is a clinical typically characterized by a deep, poorly localized chest or arm discomfort that is reproducibly associated with physical exertion or emotional stress and relieved by rest or sublingual nitroglycerin. Unstable angina is defined by a typical history such as retrosternal pain, raised levels of creatine kinase and changes on electrocardiogram typical of infarction (Palomaki et al, 1994). AMI refers to an acute process of myocardial ischaemia with sufficient severity and duration to result in permanent myocardial damage, it is divided into non Q wave myocardial infarction (NQWMI) and Q wave myocardial infarction (QWMI) (Braunwald et al, 2000).

The association of arterial endothelial disturbance, platelet adhesion/aggregation and fibrin formation are major risk factors in occurrence of ischaemic heart events (Runley et al, 1999).

Impairment of endothelial function plays an important role in the subsequent development of coronary syndromes (Selwyn et al, 1997).

von Willebrand factor (vWF) is a marker of arterial endothelial disturbance, it promotes adhesion/aggregation and hence the platelet component of arterial thrombosis. It was reported to be increased in atherosclerosis and was attributed to endothelial cell damage. Factor VIII (FVIII) promotes fibrin formation and hence the fibrin component of arterial thrombosis (Blann et al, 1998).

Whincup et al. (2002) in their study concluded that circulating vWF concentrations may be associated with incident coronary heart disease. Also, it has been confirmed that vWF which is an indicator of thrombogenesis was significantly increased in patients with acute coronary syndromes (Heper and Bayraktaroglu, 2003).

The contribution of factors associated with lifestyle such as cigarette smoking, alcohol ingestion, body mass index, work activity and the use of prescribed medicines (as a marker of chronic disease) to variation in plasma level of FVIII, vWF, fibrinogen and platelet aggregation was