Ain Shams University
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The relationship between Carotid Intima Media Thickness (CIMT) and abdominal waist circumference in Metabolic Syndrome compared to BMI

Thesis

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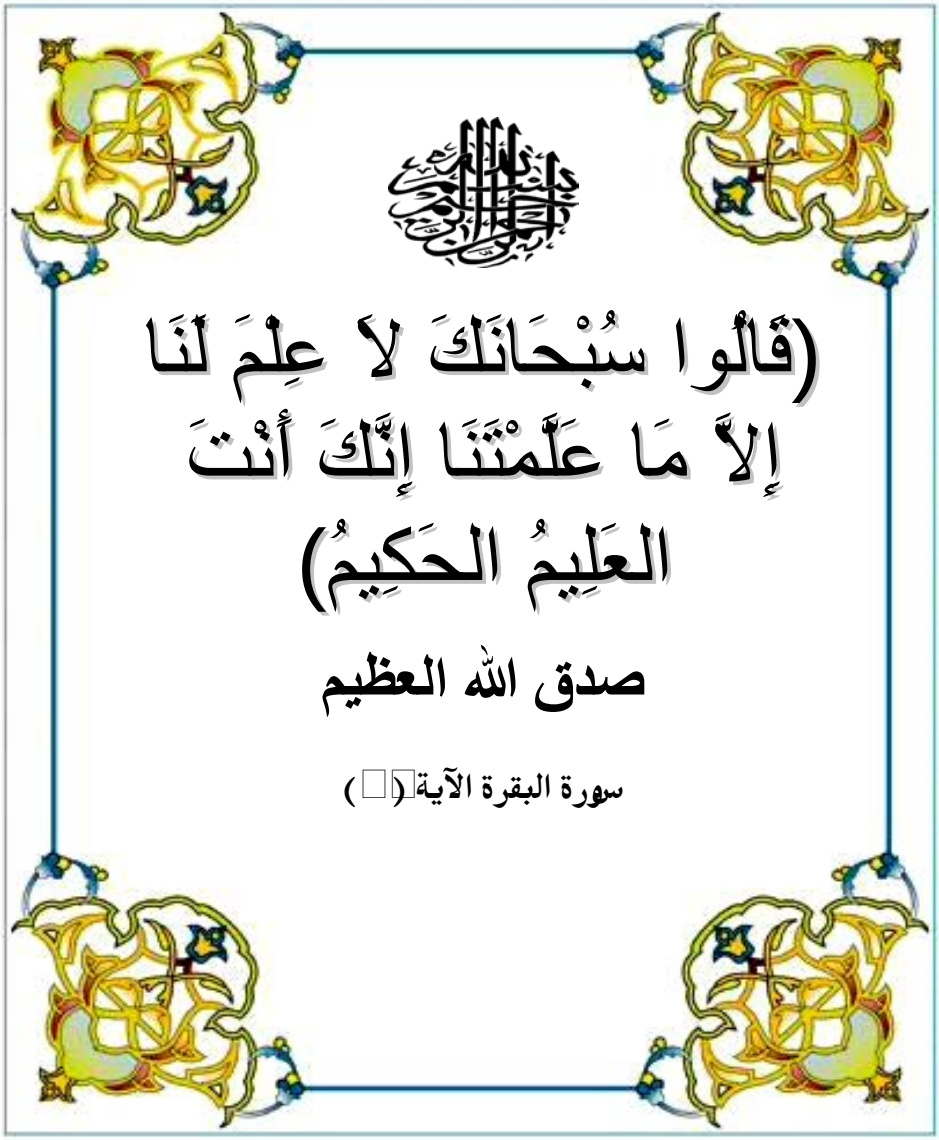

(قَالُوا سُبْحَانَكَ لاَ عِلْمَ لَنَا
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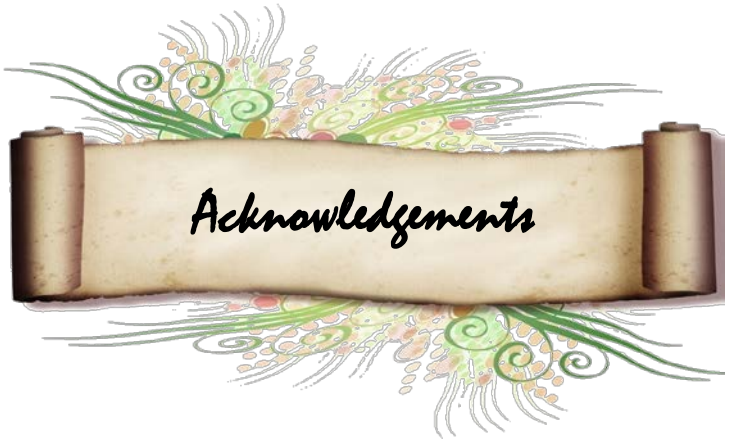

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ABBREVIATIONS

2HPP..... Two-hour postprandial

AACE ..... American Association of Clinical Endocrinologists

ACTH ..... Adrenocorticotropic hormone

ADA ..... American Diabetes Association

AFCAPS/TexCAPS…Air Force/Texas Coronary Athero-sclerosis Prevention Study

AHA..... American Heart Association

Alpha-MSH.. Alph-melanocyte stimulating hormone

ALT ..... Alanine aminotransferase

AST..... Aspartate aminotransferase

ATP III ..... Adult Treatment Panel III

BF%..... Body Fat Percentage

BMI..... Body Mass Index

CCA..... Common Carotid Artery

CHD ..... Coronary heart disease

CHF ..... Congestive Heart Failure

CIMT..... Carotid Intima Media Thickness

CVD..... Cardiovascular disease

EGIR ..... European Group for Study of Insulin Resistance

GGT..... Gamma-glutamyl transpeptidase

Hs-CRP ..... High sensitive-C Reactive Protein

ICA ..... Internal Carotid Artery

ICAM..... Intercellular adhesion molecule

IDF..... International Diabetes Foundation

IFG..... Impaired fasting glucose

IGT ..... Impaired Glucose Tolerance

IL-1 ..... Interleukin 1

IL-6 ..... Interleukin-6

IRS ..... Insulin resistance syndrome

M235T ..... Methionine for Threonine at position 235

MC4R ..... Melanocortin 4 receptor

NCEP..... National Cholesterol Education Program

NHANES ..... National Health and Nutrition Examination Survey

NHLBI..... National Heart, Lung and Blood institute

NIH ..... National institutes of Health

OGTT ..... Oral glucose tolerance test

PAI-1 ..... Plasminogen activator inhibitor-1

POMC ..... Pro-opiomelanocortin

RWT ..... Relative wall thickness

TNF-alpha.... Tumor necrosis factor alpha

VCAM ..... Vascular cell adhesion molecule

WC..... Waist Circumference

WHO ..... World Health Organization

WHR..... Waist Hip Ratio

INTRODUCTION

Metabolic syndrome is a cluster of cardiovascular risk factors such as central obesity, increase body weight, hypertension, dyslipidemias and glucose intolerance. It has been shown to be a predictor of type 2 diabetes, coronary heart disease (CHD) and mortality ***(Galal et al., 2009)***.

The presence of the metabolic syndrome was identified if three or more of the following categorical risk factors were present: abdominal obesity (waist circumference > 102 cm for men and > 88 cm for women); triglycerides > 150 mg/dl; high density lipoprotein cholesterol < 40 mg/dl for men and < 50 mg/dl for women; blood pressure > 130/85 mm Hg; and fasting glucose > 110 mg/dl or > 6.1 mmol/L ***(ATP III, NCEP, 2009)***.

The National Cholesterol Education Program (NCEP) Adult Treatment Panel III proposed their widely used clinical definition for metabolic syndrome in 2001 ***(ATP III, NCEP, 2009)***.

The measuring of waist circumference is also recommended. At any BMI, a higher waist circumference identifies an increased metabolic risk because it takes into account the distribution of adipose tissue. Although the relationship is a continuum, a cut-point of abnormal waist circumference is greater than 102 cm (> 40 inches) for men and