

STUDY OF ATHEROSCLEROSIS IN PATIENTS WITH ANKYLOSING SPONDYLITIS

Thesis

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BY

Rasha Nabil Thabet

(M.B.B.Ch, M.Sc)

Under supervision of

Prof. Dr. Dahlia Abd El-Moshen Hussein

*Professor of Internal Medicine and Rheumatology
Faculty of Medicine - Ain Shams University*

Prof. Dr. Hanan Mohamed Farouk

*Professor of Internal Medicine and Rheumatology
Faculty of Medicine - Ain Shams University*

Dr. Sameh Abdelmoteleb Hassan

*Lecturer of Internal Medicine and Rheumatology
Faculty of Medicine - Ain Shams University*

Dr. Noran Osama Ahmed El-Azizi

*Lecturer of Internal Medicine and Rheumatology
Faculty of Medicine - Ain Shams University*

*Faculty of Medicine
Ain Shams University
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LIST OF ABBREVIATIONS

Abbrev.	Full Term
ABI	Ankle-brachial index
ACE	Angiotensin-converting enzyme
ADA	Adalimumab
ADAMTS13 ..	Disintegrin-like and metalloprotease with thrombospondin type 1 motif no 13
Aix	Augmentation index
ALP	Alkaline phosphatase
ALT	Alanine amino-transferase
ANA	Antinuclear antibody
ANCA	Anti-neutrophilic cytoplasmic antibody
Anti TNF	Antitumor necrosis factor
APC	Antigen presenting cells
ApoA	Apolipoprotein A
AS	Ankylosing spondylitis
ASAS	The Assessment of Spondyloarthritis international Society
AST	Aspartate amino-transferase
BASDAI	Bath AS Disease Activity Index
BASFI	Bath AS Functional Index
BAS-G	The Bath AS global
BASMI	Bath Ankylosing Spondylitis Metrology Index
BMI	Body mass index
BP	Blood pressure

LIST OF ABBREVIATIONS (Cont.)

Abbrev.	Full Term
CAC	Coronary artery calcium
CAD	Coronary artery disease
CBC	Complete blood count
CETP	Cholesteryl ester transfer protein
CFR	Coronary flow reserve
CHD	Coronary heart disease
CIEAS	The chronic inflammation-enhanced atherosclerosis syndrome
CRP	C-reactive protein
CT	Computed tomography
CTLA-4	Cytotoxic T lymphocyte antigen-4
CVD	Cardiovascular disease
CYP2D6	Cytochrome P450 2D6
DEXA	Dual-energy X-ray absorptiometry.
DFI	Dougados functional index
DMARDs	Disease modifying antirheumatic drugs
DSE	Dobutamine stress echocardiography
EBCT	Electron beam CT
EC	Endothelial cells
ECG	Electrocardiogram
ECPR	Endothelial protein C receptors
EDASMI	Edmonton AS Metrology Index
ELISA	Enzyme-Linked Immunosorbent Assay

LIST OF ABBREVIATIONS (Cont.)

Abbrev.	Full Term
eNOS	Endothelial nitric oxide synthase
ER	Endoplasmic reticulum
ERAD	Endoplasmic reticulum associated degradation
ERAP1	The gene for endoplasmic reticulum aminopeptidase 1
ESAF	Endothelial cell stimulating angiogenesis factor
ESR	Erythrocyte sedimentation rate
ESSG	The European Spondylo-arthritis Study Group
ETA	Etanercept
FDA	Food and Drug Administration
FMD	Flow-mediated dilation
GI	Gastrointestinal
GP	Glycoprotein
GP1	Glycoprotein 1
GUESS	Glasgow Ultrasound Enthesitis Scoring System
HDL	High density lipoproteins
HLA	Human leucocyte antigen
HMG-CoA	Hydroxy-3-methyl Co-A
HMWM	High molecular weight multimers
HPETE	Hydroperoxy eicosatetraenoic acid

LIST OF ABBREVIATIONS (Cont.)

Abbrev.	Full Term
HPODE	Hydro peroxyoctadecadienoic acid
HS	Highly significant
HSP	Heat shock protein
IBD	Inflammatory bowel disease
IBP	Inflammatory back pain
ICAM	Intercellular adhesion molecule
IFN-γ	Interferon gamma
IFX	Infliximab
Ig	Immunoglobulin
IL	Interleukin
IL23R	Interleukin 23 receptor
IM	Intramuscular
IMT	Intimal media thickness
IVUS	Intravascular ultrasound
LCAT	Lecithin cholesterol asyl transferase
LDL	Low-density lipoproteins
LMP	Low molecular weight proteasome
MASES	Maastricht AS enthesitis score
MCP1	Macrophage chemoattractant protein 1
MDCT	Multidetector CT
MHC	Major histocompatibility complex
MMPs	Matrix metalloproteinases

LIST OF ABBREVIATIONS (Cont.)

Abbrev.	Full Term
MPV	Mean platelet volume
MRI	Magnetic resonance imaging
MTP	Metatarsophalangeal
NO	Nitric oxide
NS	Non significant
NSAIDS	Non steroidal antiinflammatory drugs
OxLDL	Oxidized low-density lipoproteins
PDGF	Platelet-Derived Growth Factor
PET	Positron emission tomography
PGA	Patient global assessment
PON1	Paroxonase 1
PsA	Psoriatic arthritis
PTX3	Pentraxin-3
PVC	Pulmonary vital capacity
PWV	Pulse-wave analysis
RA	Rheumatoid arthritis
RF	Rheumatoid factor
ROM	Range of movement
RWMA	Regional wall motion abnormality
S	Significant
SAA	Serum amyloid A
SAP	Serum amyloid protein
SC	Subcutaneous

LIST OF ABBREVIATIONS (Cont.)

Abbrev.	Full Term
SCORE	Systematic coronary risk evaluation
SD	Standard deviation
SF	San Francisco
SF-36	Short Form 36
SLE	Systemic lupus erythematosus
SpA	Spondyloarthropathy
SPECT	Single-photon emission computed tomography
TC	Total cholesterol
TG	Triglyceride
TGFβ	Transforming growth factor β
TIA	Transient ischemic attack
TNF	Tumor necrosis factor
TTDE	Transthoracic doppler echocardiography
UPR	Unfolded protein response
US	Ultrasonography
VAS	Visual analog scale
VCAM	Vascular cell adhesion molecule
VEGF	Vascular endothelial growth factor
vWF	von Willebrand factor
WP	Weibel-Palade
βHCG	β -human chorionic gonadotropin

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INTRODUCTION

Ankylosing spondylitis (AS) is a systemic inflammatory disorder that causes arthritis of the spine and sacroiliac joints, and even the peripheral joints and that involves extraarticular structures including the eyes, lung, heart, vessels, kidneys and nerves (*Yuan, 2009*). AS affects up to 1% of the population, and associated with increased mortality rates (*Peters et al., 2010*).

Epidemiology studies have shown that increased mortality is largely attributable to cardiovascular disease (CVD) that has been found as 20%-40% (*Lautermann and Braun, 2002*).

Divecha et al. (2005), demonstrated that patients with AS have several CVD risk factors, which are driven in turn by systemic inflammatory mediators. Accelerated atherosclerosis in AS may be due to traditional CV risk factors e.g, atherogenic lipid profile and hypertension (*Van Halm et al., 2006*).

Indeed, there is increased evidence that the underlying inflammatory process in chronic inflammatory processes contribute to various stages of atherothrombosis from early atheroma formation to plaque instability and thrombus formation (*Libby, 2008*).