



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكرو فيلم

بسم الله الرحمن الرحيم



MONA MAGHRABY



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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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Evaluation of Serum Fetuin A in Psoriatic Patients and Its Correlation to Coronary Artery Disease

Thesis

*Submitted for Fulfillment of Master's Degree in
Dermatology, Venereology & Andrology*

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List of Abbreviations

Abb.	Full term
<i>AHSG</i>	<i>α2-Heremans-Schmid glycoprotein</i>
<i>AIDS</i>	<i>Acquired Immunodeficiency Syndrome</i>
<i>APC</i>	<i>Antigen presenting cell</i>
<i>AUC</i>	<i>Area under curve</i>
<i>BB-UVB</i>	<i>Broadband UVB</i>
<i>BCC</i>	<i>Basal cell carcinoma</i>
<i>BMI</i>	<i>Body mass index</i>
<i>BSA</i>	<i>Body surface Area</i>
<i>BSA</i>	<i>Body surface area</i>
<i>CAC</i>	<i>Coronary artery calcification</i>
<i>CACS</i>	<i>Coronary artery calcification scoring</i>
<i>CAD</i>	<i>Coronary artery disease</i>
<i>CCL20</i>	<i>Chemokine ligand 20</i>
<i>CCR6</i>	<i>Chemokine receptor</i>
<i>CCTA</i>	<i>Coronary computed tomography angiography</i>
<i>CLA</i>	<i>Cutaneous lymphocyte antigen</i>
<i>CRP</i>	<i>C-reactive protein</i>
<i>CsA</i>	<i>Cyclosporine</i>
<i>CTA</i>	<i>Computed tomography angiography</i>
<i>CTL</i>	<i>Cytotoxic T lymphocyte type 1</i>
<i>CVD</i>	<i>Cardiovascular disease</i>
<i>CXC</i>	<i>T-cells called chemokines</i>
<i>DCs</i>	<i>Dendritic cells</i>
<i>DM</i>	<i>Diabetes</i>
<i>EGF</i>	<i>Epidermal growth factor</i>
<i>ELISA</i>	<i>Enzyme Linked Immunosorbent Assay</i>
<i>EMA</i>	<i>European Medicines Agency</i>
<i>Erk 1/2</i>	<i>Extracellular signal- regulated kinase</i>
<i>FDA</i>	<i>Food and Drug Administration</i>

List of Abbreviations (cont...)

Abb.	Full term
<i>FGF</i>	<i>Fibroblast growth factor</i>
<i>FRS</i>	<i>Framingham risk score</i>
<i>GLUT4</i>	<i>Glucose transporter-4</i>
<i>GM-CSF</i>	<i>Granulocyte macrophage colony stimulating factor</i>
<i>GSK-3</i>	<i>Glycogen synthase kinase-3</i>
<i>HLA</i>	<i>Human leucocyte antigen</i>
<i>HNT</i>	<i>Hypertension</i>
<i>HU</i>	<i>Hounsfield units</i>
<i>IBM SPSS</i>	<i>Statistical Package for Social Science</i>
<i>ICAM-1</i>	<i>Intercellular adhesion molecule-1</i>
<i>IFN-γ</i>	<i>Interferon gamma</i>
<i>IL-6</i>	<i>Interleukin-6</i>
<i>IRS</i>	<i>Insulin receptor substrate</i>
<i>KGF</i>	<i>Keratinocyte growth factor</i>
<i>LDL</i>	<i>Low density lipoprotein</i>
<i>LFA-1</i>	<i>Lymphocyte function-associated antigen type 1</i>
<i>MAPK</i>	<i>Mitogen activated protein kinase</i>
<i>MDCT</i>	<i>Multidetector computed tomography</i>
<i>MHC</i>	<i>Major Histocompatibility complex</i>
<i>MI</i>	<i>Myocardial infarction</i>
<i>MICA</i>	<i>MHC class I chain related protein</i>
<i>MTX</i>	<i>Methotrexate</i>
<i>NB-UVB</i>	<i>Narrowband ultraviolet B</i>
<i>NFAT</i>	<i>Nuclear factor of activated T-cells</i>
<i>NKT</i>	<i>Natural killer cell</i>
<i>NMSC</i>	<i>Non melanoma skin cancer</i>

List of Abbreviations (Cont...)

Abb.	Full term
<i>NSAIDs</i>	<i>Non-steroidal anti-inflammatory drugs</i>
<i>PAI-2</i>	<i>Plasminogen activator inhibitor-2</i>
<i>PASI</i>	<i>Psoriasis area and severity index</i>
<i>PDK-1,3</i>	<i>Phosphoinositide dependent kinase-1</i>
<i>PGA</i>	<i>Physician global assessment</i>
<i>PI3-K</i>	<i>Phosphatidyl inositol 3-kinase</i>
<i>PIP2</i>	<i>Phosphatidyl inositol 4, 5bisphosphate</i>
<i>PIP3</i>	<i>Phosphatidyl inositol 1, 4, 5 triphosphate</i>
<i>PKB</i>	<i>Protein kinase B</i>
<i>PLE</i>	<i>Polymorphous light eruption</i>
<i>PRL</i>	<i>Prolactin</i>
<i>PsA</i>	<i>Psoriatic arthritis</i>
<i>PUVA</i>	<i>Psoralen ultraviolet A</i>
<i>RA</i>	<i>Rheumatoid arthritis</i>
<i>RAR</i>	<i>Retinoic acid receptor</i>
<i>ROC</i>	<i>Receiver operating characteristic curve</i>
<i>SCC</i>	<i>Squamous cell carcinoma</i>
<i>SCORE</i>	<i>Score and the European Systematic Coronary Risk Evaluation</i>
<i>STAT4</i>	<i>Signal transducer and activator of transcription 4</i>
<i>T-AP</i>	<i>T-cell / APC</i>
<i>TG</i>	<i>Triglycerides</i>
<i>TGF-α</i>	<i>Transforming growth factor alpha</i>
<i>TGF-β</i>	<i>Transforming growth factor-β</i>
<i>Th</i>	<i>T helper</i>
<i>TLR-2</i>	<i>Toll like receptor type-2</i>
<i>TNF-α</i>	<i>Tumor necrosis factor alpha</i>

List of Abbreviations (cont...)

Abb.	Full term
<i>T-reg</i>	<i>T-regulatory cell</i>
<i>UVB</i>	<i>Ultraviolet B</i>
<i>VCAM</i>	<i>Vascular cell adhesion molecule</i>
<i>VEGF</i>	<i>Vascular endothelial growth factor</i>
<i>VLA-4</i>	<i>Very late antigen-4</i>

INTRODUCTION

Psoriasis is a chronic, immune-mediated disease affecting approximately 100 million people worldwide. Psoriasis affects men and women of all ages and can manifest in many different forms, the most common is psoriasis vulgaris (or plaque psoriasis). Plaque psoriasis is characterized by sharply demarcated plaques of erythema covered in a silvery-white scale, which is the result of rapid hyper proliferation and dysregulated differentiation of epidermal keratinocytes (*Adriana et al., 2019*).

The etiology of psoriasis is multifactorial and includes a complex interplay of genetic, environmental, infectious and lifestyle factors (*Wolf-Henning, 2018*). Other variants, as innate immune pathways, antigen presentation, and T-cell activation and differentiation are involved, the high level of inflammatory mediators such as $\text{TNF}\alpha$ and IL-6 may be associated with the inflammatory response to the vascular remodeling and cardiovascular changes (*Angelica et al., 2019*). Also it may also be an independent risk factor for CVD, endothelial dysfunction and increased vascular intima media thickness have been observed in patients with psoriasis with no cardiovascular risk (*Shanu et al., 2018*).

Fetuin A is a glycoprotein that is known as Heremans-schmid and can attach to the cationic calcium ions. Fetuin A can prevent calcification by forming soluble complexes with

calcium and phosphate, which are called calciprotien particle. For this reason, Fetuin A has been proposed as an endogenous inhibitor of pathological mineralization or calcification of soft tissue. The low level of Fetuin A has been also found to be associated with vascular calcification (*Bernadett et al., 2019*).

Coronary artery calcification was previously thought to be a benign process, and the calcified lesion increases in accordance with aging. Subsequently, studies determined that calcification is associated with arterial stiffness, which increases risk for adverse cardiovascular events. Further studies showed that the extent of coronary artery calcification (CAC) strongly correlated with the degree of atherosclerosis and the rate of future cardiac events (*Hiroyoshi et al., 2018*).

Coronary artery calcium scoring using non contrast computed tomography is clinically useful noninvasive estimate of coronary artery disease burden. when coronary artery calcification present in large amounts, it has been associated with high possibility of significant stenotic lesions and increased mortality. Risk for coronary event increases with increasing calcium scores among asymptomatic individual (*Mallory et al., 2020*).