



Faculty of Medicine

# **Utilization of Pregnancy Associated Plasma Protein-A (PAPP-A) as a Diagnostic Marker for Acute Coronary Syndromes**

Thesis

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## **LIST OF ABBREVIATIONS**

<b>2VD</b>	Two vessel disease.
<b>ABI</b>	Ankle brachial index.
<b>ABP</b>	Arterial blood pressure
<b>ACE</b>	Angiotensin converting enzyme.
<b>ACS</b>	Acute coronary syndrome
<b>ADP</b>	Adenosine diphosphate.
<b>AHA</b>	American Heart Assosiation.
<b>ALT</b>	Alanine aminotransferase.
<b>AMI</b>	Acute myocardial infarction.
<b>AST</b>	Aspartate aminotransferase.
<b>ASTc</b>	Cytoplasmic aspartate aminotransferase.
<b>ASTm</b>	Mitochondrial aspartate aminotransferase.
<b>BNP</b>	B-Natriuretic peptide.
<b>C3</b>	Complement 3.
<b>CA</b>	Coronary angiography.
<b>CAC</b>	Coronary artery calcification.
<b>CCA</b>	Common carotid artery.
<b>CFVR</b>	Coronary flow velocity reserve.
<b>CHD</b>	Coronary heart disease
<b>Ck-MB</b>	Creatine Kinase MB isoenzyme

<b>CK-T</b>	Creatine kinase-Total.
<b>CMV</b>	Cytomegalovirus.
<b>CRP</b>	C-reactive protein
<b>CSA</b>	Chronic stable angina.
<b>CT</b>	Computed Tomography.
<b>DM</b>	Diabetes mellitus .
<b>EBT</b>	Electron beam tomography.
<b>ECG</b>	Electrocardiogram.
<b>ED</b>	Emergency department.
<b>EF</b>	Ejection fraction.
<b>ELISA</b>	Enzyme linked immunosorbent assay.
<b>ELISA</b>	Enzyme linked immunosorbent assay.
<b>FMD</b>	Flow mediated dilatation.
<b>GPBB</b>	Glycogen phosphorylase BB isoenzyme.
<b>HDL</b>	High density lipoprotein.
<b>h-FABP</b>	Heart fatty acid binding protein.
<b>HGF</b>	Hepatocyte growth factor.
<b>HS</b>	Highly significant.
<b>CCU</b>	Coronary Care Unit.
<b>hs-CRP</b>	High sensitivity C-reactive protein.
<b>HTN</b>	Hypertension
<b>HVMLC-1</b>	Human ventricular myosin light chain isotype-1.

<b>IGF-1</b>	Insulin like growth factor-1.
<b>IgG</b>	Immunoglobulin G.
<b>IL 1B</b>	Interleukin 1B.
<b>IL-1Ra</b>	Interleukin-1 receptor antagonist.
<b>IL6</b>	Interleukin 6.
<b>IMA</b>	Ischemia modified albumen.
<b>IMT</b>	Intima media thickness.
<b>KDa</b>	Kilo Dalton.
<b>LDL</b>	Low density lipoprotein
<b>Lp(a)</b>	Lipoprotein (a).
<b>LVEF</b>	Left ventricular ejection fraction.
<b>MCP-1</b>	Monocyte chemoattractant protein-1.
<b>M-CSF</b>	Macrophage colony stimulating factor.
<b>MI</b>	Myocardial infarction
<b>MMP</b>	Matrix metalloproteinases.
<b>MPO</b>	Myeloperoxidase..
<b>MRI</b>	Magnetic resonance imaging.
<b>MVD</b>	Multivessel disease.
<b>NF-KB</b>	Nuclear factor-kappa B.
<b>NICP</b>	Non ischemic chest pain.
<b>NO</b>	Nitric oxide.
<b>NPV</b>	Negative predictive value.

<b>NS</b>	Nonsignificant.
<b>NSTEMI</b>	Non ST elevation myocardial infarction.
<b>PAD</b>	Peripheral arterial disease.
<b>PET</b>	Positron emission tomography.
<b>PPV</b>	Positive predictive value.
<b>Pro MBP</b>	Proform of major basic protein.
<b>P-value</b>	Probability value (Probability of chance) (significance)
<b>PVD</b>	Peripheral vascular disease.
<b>ROC curve</b>	Reproducer operator characteristic curve.
<b>SD</b>	Standard deviation
<b>SD</b>	Standard deviation.
<b>STEMI</b>	ST elevation myocardial infarction.
<b>SVD</b>	Single vessel disease.
<b>TEE</b>	Transoesophageal echocardiography.
<b>THR</b>	Target heart rate.
<b>TIMPs</b>	Tissue inhibitor of metalloproteinases.
<b>TnT</b>	Troponin T.
<b>UA</b>	Unstable angina
<b>Vs</b>	Versus

Introduction  
&  
Aim of The Work

## Introduction

The term vulnerable patient has been proposed to define subjects susceptible to an acute coronary event based on plaque characteristics, blood abnormalities or myocardial vulnerability (*Naghavi et al.,2003*). It is important to identify both vulnerable patients & vulnerable plaques. Atherosclerotic arteries obtained at autopsy from patients who died suddenly of cardiac causes indicate that Pregnancy Associated Plasma Protein-A (PAPP-A) was abundantly expressed in plaque cells&in extracellular matrix of ruptured &eroded plaques, but not in stable plaques (*Bayes-Genis et al.,2001*).

Pregnancy Associated Plasma Protein (PAPP-A) is a zinc-binding matrix metalloproteinase, a member of metzincin superfamily which was originally identified in serum of pregnant women to help determine term date (*Libby, 2002*). It is also used for screening of fetal trisomy in the first pregnancy trimester (*Bayes-Genis et al.,2001*). .

There is growing evidence suggesting that inflammation has a pivotal role in acute coronary syndromes (*Ross, 1999*). PAPP-A,probably participates in the inflammatory reactions of vascular walls, which could lead to structural