بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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جامعة عين شمس

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قسم

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MONA MAGHRABY

A THESIS FOR PARTIAL FULFILLMENT OF
MASTER DEGREE IN MASTER OF CRITICAL CARE MEDICINE

Study the Value of Interleukin-6 As Diagnostic and Predictive marker of Cardiac Events in ST Segment Elevation Myocardial Infarction

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Praise to "Allah", the Most Gracious and the Most Merciful Who Guides Us to the Right Way.

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Taghreed Mohamed Fareed Othman Mohamed

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AA	**:**	Amino acid
ACC	**:**	American College of Cardiology
ACS	**:**	Acute coronary syndrome
AHA	**:**	American Heart Association
AMI	**:**	Acute myocardial infarction
CABG	**:**	Coronary artery bypass graft
CHD	**:**	Coronary heart disease
CHF	**:**	Congestive heart failure
CK-MB	**:**	Creatine kinase myocardial band
CNTF	**:**	Ciliary neurotrophic factor
CRP	**:**	C-reactive protein
CT-1	**:**	Cardiotrophin-1
CVD	**:**	Cardiovascular disease
DM	**:**	Diabetes mellitus
ECG	**:**	Electrocardiogram
ESC	**:**	The European Society of Cardiology
FRISC	**:**	Fragmin and/or early revascularization during instability in coronary artery disease
G-CSF	**:**	Granulocyte-colony stimulating factor
GUSTO	**:**	Global utilization of streptokinase and tPA for occluded coronary arteries trial
HTN	**:**	Hypertension
IHD	**:**	Ischemic heart disease
IL-6	**:**	Interleukin-6
LBBB	**:**	Left bundle branch block

LDL	**:**	Low density lipoprotein
LIF	**:**	Leukemia inhibitory factor
MCP-1	**:**	Monocyte chemoattractant protein-1
NON STEMI	**:**	Non ST segment elevation myocardial infarction
OSM	**:**	Oncostatin M
sICAM-1	**:**	Soluble intercellular adhesion molecule-1
STEMI	**:**	ST segment elevation myocardial infarction
TIMI	**:**	Thrombolysis in myocardial infarction
TNFα	**:**	Tumor necrosis factor-α
UA	**:**	Unstable angina
URL	**:**	Upper reference limit

INTRODUCTION

Definition of acute myocardial infarction

Owing to major changes in the biomarkers available for diagnosis, criteria for acute myocardial infarction have been revised. The current international consensus definition states that the term acute myocardial infarction (AMI) should be used when there is evidence of myocardial necrosis in a clinical setting consistent with myocardial ischemia ***(Thygesen et al., 2007)***.

The present guidelines pertain to patients presenting with ischemic symptoms and persistent ST-segment elevation on the electrocardiogram (ECG). Most of these patients will show a typical rise in biomarkers of myocardial necrosis and progress to Q wave myocardial infarction. Separate guidelines have recently been developed by another task force of the ESC (European Society of Cardiology) for patients presenting with ischemic symptoms but without persistent ST segment elevation and for patients undergoing myocardial revascularization in general ***(Wijns et al., 2010; Hamm et al., 2011)***.

Due to technological advances in the fields of more sensitive biomarkers and imaging techniques and due to a need for a more precise and comparable definition, The Joint European Society of Cardiology and American College of Cardiology Committee

published its first consensus document for the redefinition of myocardial infarction in the year 2000 with a more pronounced biochemical approach demanding an elevation of cardiac biomarkers before myocardial infarction could be diagnosed and a more prospective approach considering rather ST-T-changes than Q wave development for categorization. With this definition the "STEMI" was born ***(Alpert et al., 2000)***.

The task force was then joined by the American Heart Association (AHA) and the World Health Federation to become the global task force for the definition of acute myocardial infarction. This definition was updated by the same task force in 2007 giving cardiac troponins a much higher significance than in the 2000 definition. Additionally, different types of myocardial infarction were defined. By now, cardiologists around the world had become used to using cardiac biomarkers and particularly troponin for the diagnosis of acute myocardial infarction (AMI) ***(Thygesen et al., 2007; Mendis et al., 2011b)***.

The general definition of acute myocardial infarction is a definition of the underlying pathology and remains unchanged. Acute myocardial infarction is thus defined as myocardial necrosis due to prolonged myocardial ischemia. Ideally to diagnose the two components of the definition myocardial necrosis and myocardial ischemia, two different biomarkers indicating each of these

components should be available. Unfortunately, while cardiac troponins are very specific markers of myocardial cell necrosis, good markers of ischemia are currently lacking. Thus other criteria have to support the diagnosis of acute myocardial infarction. These basic criteria for the AMI diagnosis were not altered in the new definition except for a small amendment regarding the identification of an intracoronary thrombus by angiography or autopsy which was added as a relevant criterion ***(Thygesen et al., 2012)***.

Table 1 was showed the criteria for acute myocardial infarction and the definition for the different types of myocardial infarction as published in the 2012 definition ***(Thygesen et al., 2012; Thygesen & Searle, 2013)***.