Predictors and Outcome of Acute Coronary Syndrome in Patients with Insignificant Coronary Artery Disease

Thesis
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By

Adel Abdelgawad Abdelazim Bakr, M.Sc

Under the supervision of

Dr. Mohammed Mahmoud Abdel Ghany, MD.

Professor of Cardiology
Faculty of medicine. Cairo University

Dr. Hossam El-Din Ghanem El-Hossary, MD.

Assistant Professor of Cardiology
Faculty of medicine. Cairo University

Dr. Yasser Yazeed Abdelmonem, MD.

Lecturer of Cardiology
Faculty of medicine. Cairo University

Faculty of medicine
Cairo University
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Table of contents

Acknowledgment ……

Table of contents ……...……... *I*

List of abbreviations ……... *II*

List of tables ……. *VI*

List of figures …… *VIII*

Abstract…….. *IX*

Introduction and aim of the work……. *1*

Review of literature

Chapter 1. Overview of acute coronary syndrome…… *4*

Chapter 2. Predictors of adverse outcome of ACS patients…… *56*

Chapter 3. Value of insignificant CAD in patients presenting with ACS.. *76*

Patients and methods ……..…….. *101*

Results ……..……... *108*

Discussion ……..... *129*

Summary and conclusion ……. *144*

Limitations……..……...…… *147*

Recommendations…….. *148*

References……. *149*

Arabic summary……

List of abbreviations

ACC	**American College of Cardiology**
ACE-I	**Angiotensin-converting enzyme inhibitor**
ACS	**Acute coronary syndrome**
ACT	**Activated clotting time**
ACUITY	**Acute Catheterization and Urgent Intervention Triage strategY**
ADP	**Adenosine diphosphate**
AF	**Atrial fibrillation**
AHA	**American Heart Association**
AMI	**Acute myocardial infarction**
aPPT	**Activated partial thromboplastin time**
ASA	**Acetyl salicylic acid**
ATP	**Adenosine 5b-triphosphate**
AV	**Atrioventricular**
BBB	**Bundle branch block**
BNP	**B-type natriuretic peptide**
CABG	**Coronary artery bypass graft**
CAD	**Coronary artery disease**
CBF	**Coronary blood flow**
CCS	**Canadian Cardiovascular Society**
CFR	**Coronary flow reserve**
CHD	**Coronary heart disease**
CK	**Creatine kinase**
CKD	**Chronic kidney disease**
CK-MB	**Creatine kinase-myocardial band**
CMD	**Coronary microvascular dysfunction**
CMR	**Cardiac magnetic resonance**
COPD	**Chronic obstructive pulmonary disease**
COX	**Cyclo-oxygenase**
CrCl	**Creatinine clearance**

CRUSADE	**Can Rapid risk stratification of Unstable angina patients Suppress Adverse outcomes with Early implementation of the ACC/AHA Guidelines**
C.S	**Cardiogenic shock**
CT	**Computed tomography**
CVD	**Cardiovascular disease**
CVS	**Cerebrovascular stroke**
CSX	**Cardiac syndrome X**
DM	**Diabetes mellitus**
DES	**Drug eluting stent**
ECG	**Electrocardiogram**
ED	**Emergency department**
ESC	**European Society of Cardiology**
FDA	**Food and Drug Administration**
FFR	**Fractional flow reserve**
FRISC	**Fast Revascularization in InStability in Coronary disease**
GDF-15	**Growth differentiation factor-15**
GERD	**Gastroesophageal reflux disease**
GFR	**Glomerular filtration rate**
GIK	**Glucose-insulin-potassium**
GP IIb/IIIa	**Glycoprotein IIb/IIIa**
GRACE	**Global Registry of Acute Coronary Events**
GUSTO	**Global Utilization of Streptokinase and Tissue plasminogen activator for Occluded coronary arteries**
H-FABP	**Heart-type fatty acid binding protein**
HIT	**Heparin induced thrombocytopenia**
HF	**Heart failure**
HORIZONS	**Harmonizing Outcomes with RevasculariZatiON and Stents in acute myocardial infarction**
HsCRP	**High-sensitivity C-reactive protein**
HTN	**Hypertension**
IL	**Interleukin**
IVUS	**Intravascular ultrasound**

JVD	**Jugular venous distension**
LBBB	**Left bundle branch block**
LMWH	**Low molecular weight heparin**
LVEF	**Left ventricular ejection fraction**
MACE	**Major adverse cardiac events**
MI	**Myocardial infarction**
MINOCA	**Myocardial infarction with no obstructive coronary atherosclerosis**
MPO	**Myeloperoxidase**
MR	**Mitral regurgitation**
MSCT	**Multisclice CT**
NO	**Nitric oxide**
NONCA	**Normal or near-normal coronary arteries**
NOCAD	**Non-obstructive coronary artery disease**
NSAIDS	**Nonsteroidal anti-inflammatory drugs**
NSTE-ACS	**Non ST elevation acute coronary syndrome**
NSTEMI	**Non ST elevation myocardial infarction**
NT-proBNP	**N-terminal prohormone of brain natriuretic peptide**
NTG	**Nitroglycerin**
O/A	**On admission**
OCAD	**Obstructive coronary artery disease**
OCT	**Optical coherence tomography**
OSA	**Obstructive sleep apnea**
PAD	**Peripheral artery disease**
PCI	**Percutaneous coronary intervention**
PPCI	**Primary percutaneous coronary intervention**
PPI	**Proton pump inhibitor**
PPLA2	**Pancreatic phospholipase A2**
PURSUIT	**Platelet glycoprotein IIb/IIIa in Unstable angina: Receptor Suppression Using InTegrilin**
RBBB	**Right bundle branch block**
RBS	**Random blood sugar**
RR	**Relative risk**
RWMA	**Regional wall motion abnormality**

SBP	**Systolic blood pressure**
SC	**Subcutaneous**
SCAD	**Spontaneous coronary artery dissection**
STE-ACS	**ST elevation acute coronary syndrome**
STEMI	**ST elevation myocardial infarction**
TIA	**Transient ischemic attack**
TIMI	**Thrombolysis in myocardial infarction**
TnC	**Troponin C**
TnI	**Troponin I**
TnT	**Troponin T**
tPA	**Tissue plasminogen activator**
Tpn	**Troponin**
TTE	**Transthoracic echocardiography**
TTP	**Thrombotic thrombocytopenic purpura**
TXA	**Thromboxane A**
UA	**Unstable angina**
UFH	**Unfractionated heparin**
VT	**Ventricular tachycardia**
VF	**Ventricular fibrillation**
WBC	**White blood cell**

List of tables

Table 1. Third universal definition of MI ……...10

Table 2. Aspects of diagnosis of myocardial infarction by different techniques ……..11

Table 3. Classification of myocardial infarction…….……11

Table 4. Three principal presentations of unstable angina……....12

Table 5. Canadian cardiovascular society classification of angina pectoris……..…13

Table 6. Braunwald clinical classification of unstable angina and non-ST-elevation myocardial infarction……..…….14

Table 7. Signs and symptoms represent an acute coronary syndrome…….....16

Table 8.Killip classification for patients with ST-segment elevation myocardial infarction……...……17

Table 9. TIMI risk score for STEMI……...27

Table 10. Predictors of the Thrombolysis in Myocardial Infarction (TIMI) risk score for UA/NSTEMI1…….....28

Table 11. Predictors of the Global Registry of acute Cardiac Events (GRACE) risk score……29

Table 12. PURSUIT risk score for UA/NSTEMI……...…..…….30

Table 13. CRUSADE registry bleeding risk score.....…..31

Table 14. Contraindications and cautions for fibrinolytic use in STEMI from ACC/AHA 2004 Guideline Update…….…38

Table 15. Clinical classification of coronary microvascular dysfunction…….…85

Table 16. Pathogenetic mechanisms of coronary microvascular dysfunction…….86

Table 17. Prevalence of non-obstructive CAD at angiography in ACS by sex……..…87

Table 18. Functional assessment techniques clinically utilized to evaluate the human coronary microvasculature in the absence of obstructive coronary artery disease……..……..90

Table 19. Comparative summary of methods to investigate coronary microvascular function ……..……..91

Table 20. Clinical events at 1-year follow-up* and TIMI risk scores in patients with angiography findings of NSTE-ACS in the PROVE IT–TIMI 22, OPUS–TIMI 16, and TIMI 11B Trials.....94

Table 21. Diagnostic tests, prognostic characteristics, and therapeutic treatments stratified for specific causes of myocardial infarction with no obstructive coronary atherosclerosis.....95

Table 22. Treatment of subjects with angina, evidence of myocardial ischemia, and no obstructive CAD.....97

Table 23. Estimates of 1-Year MI, All-Cause Mortality, and Combined Outcome Rates by CAD Extent.....100

Table 24. Demographics and clinical characteristics between insignificant (Group I) and significant (Group II) CAD.....109

Table 25. Clinical presentation of patients with insignificant (Group I) and significant (Group II) CAD.....111

Table 26. Electrocardiographic findings across groups.....112

Table (27.a). Results of quantitative laboratory work-up across groups.....114

Table (27.b). Results of qualitative laboratory work-up across groups.....115

Table 28. Echocardiographic assessment before discharge across groups.....117

Table 29. Medications received during hospital stay across groups. 119

Table 30. Medications prescribed on discharge across groups.....121

Table 31. In-hospital clinical outcome across groups.....123

Table 32. Outcome after 3 months follow-up across groups.....124

Table 33. Echocardiographic assessment 3 months after discharge across groups.....125

Table 34. Incidence of the various clinical form of ACS across groups.....126

Table 35. Multivariable binary logistic regression analysis for prediction of non-significant CAD.....127

Table 36. Kaplan-Meier analysis for 90-day survival across groups.....128

Table 37. Baseline demographic and clinical features of the current study and other trials/registries.....135

Table 38. Independent predictors of insignificant CAD.....138

List of figures

Figure 1. The process of coronary artery disease……...6

Figure 2. Classification of acute coronary syndrome…….9

Figure 3. Acute coronary syndrome algorithm……...33

Figure 4. Representative OCT images……...78

Figure 5. Diagnostic algorithm of myocardial infarction with no obstructive coronary atherosclerosis…….…….89

Figure 6. Demographics and clinical characteristics between insignificant (Group I) and significant (Group II) CAD……..110

Figure 7. Electrocardiographic findings across groups……..113

Figure 8. Qualitative (Prevalence) laboratory work-up across groups……..116

Figure 9. Coronary angiographic findings across insignificant group……..……118

Figure 10. Target vessel stenosis across insignificant group…….…..118

Figure 11. Medications received during hospital stay across groups…….120

Figure 12. Medications prescribed on discharge across groups…….122

Figure 13. Incidence of the various clinical form of ACS across groups……..126

Figure 14. Receiver-operating characteristic (ROC) curve derived from the multivariable binary logistic regression analysis for prediction of insignificant CAD…….…….....128

Abstract

Objectives: The characterization of patients who have acute coronary syndrome (ACS) with insignificant stenosis is unclear. The present study aimed to investigate the predictors and in-hospital and 3-months outcome of acute coronary syndrome (ACS) patients with insignificant stenosis on a coronary angiogram.

Methods: This prospective observational study included 200 consecutive patients admitted with the diagnosis of ACS to coronary care unit, cardiology department over a period from June 2013 to May 2014. All patients underwent cardiac catheterization and classified into two groups, group I (insignificant CAD (lumen diameter <50%)) and group II (significant CAD (one or more vessels >70% diameter stenosis)).

Results: Patients with insignificant CAD were significantly younger (p<0.001), more likely to be female (p=0.006), more often non-white (p=0.032), less likely to smoke (p=0.006), less likely to have diabetes mellitus (p<0.001), and less likely to have history of CAD (p=0.042) or PCI (p=0.037), with similar prevalence of other traditional significant CAD risk factors (hypertension, dyslipidemia, and premature family history of significant CAD). These patients were less likely to have ischemic ST-segment changes on presentation (p<0.001), less likely to present with typical chest pain (p<0.001), had lower elevations in peak troponin I (p <0.001) and CK-MB levels (p <0.001), with lower LDL-C (p = 0.006**),** and higher HDL-C levels (p=0.020).

Patients with insignificant CAD were significantly less likely to be treated in-hospital with thienopyridines (p<0.001), lipid-lowering agents (p<0.001), b-blockers (p=0.002), ACE inhibitor/ARBs (p=0.007), and higher rates of calcium channel blocker therapy (p<0.001). This trend continued at discharge. Also aspirin was significantly more prescribed at discharge in the significant versus insignificant group (98.0% vs 81.0%, p <0.001).

Patients with insignificant CAD had lower rates of in-hospital adverse clinical outcome (recurrent angina (p=0.029), and cardiogenic shock (p=0.029)), with similar prevalence of in-hospital mortality between both groups. As regard the clinical follow-up