The Current Management and the Clinical Outcomes of Patients Presented with Acute ST Segment Elevation Myocardial Infarction in East Cairo Hospitals, A Multicenter Study

Thesis

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالُوا

سبحانك لا علم لنا
إلا ما علمتنا إنك أنت
العليم الحكيم

صدق الله العظيم

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List of Abbreviations

Abb.	Full term
ACC	American college of cardiology
ACCA	Acute Cardiovascular Care Association
ACE	Angiotensin-converting enzyme
ACEIs	Angiotensin converting enzyme inhibitors
AEDs	Automated external defibrillators
AHA	American heart association
ALS	Advanced life support
ALT	Alanine aminotransferase
AMI	Acute myocardial infarction
apo A-1	Apolipoprotein A-I
apo B	Apolipoprotein B
apoE	Apolipoprotein E
AST	Aspartate aminotransferase
BMI	Body mass index
BMS	Bare metal stents
CABG	Coronary artery bypass grafting
CAD	Coronary artery disease
CAMELOT	Comparison of Amlodipine vs Enalapril to Limit Occurrences of Thrombosis trial
CCU	Coronary care unit
CHD	Coronary heart disease
CK	Creatine kinase
CMRI	Cardiac magnetic resonance imaging
CPK	Creatine phosphokinase
CPR	Cardiopulmonary resuscitation
cTn	Cardiac troponin
CVD	Cardiovascular disease
D1	First diagonal branch
D2B	Door to ballon

List of Abbreviations *(Cont...)*

Abb.	Full term
DAPT	Dual antiplatelet therapy
DES	Drug eluting stents
DM	Diabetes mellitus
EAPCI	European Association of Percutaneous Cardiovascular Interventions
ECG	Electrocardiogram
ED	Emergency department
EgSC	Egyptian society of cardiology
EHS-ACS-II	The second Euro Heart Survey on acute coronary syndromes
EMS	Emergency medical services
ESC	European society of cardiology
ESRD	End stage renal disease
EU	European union
FBS	Fasting blood sugar
FITT-STEMI	Feedback Intervention and Treatment Times in ST-Elevation Myocardial Infarction
FMC-B1	Time from first medical contact to balloon inflation time
GRACE	Global Registry of Acute Coronary Events
HDL	High-density lipoprotein
HF	Heart Failure
HTN	Hypertension
IRA	Infarct-related artery
IV	Intravenous
LAD	Left anterior descending
LCX	Left circumflex
LDL	Low-density lipoprotein
LM	Left Main
Lp(a)	Lipoprotein(a)

List of Abbreviations (Cont...)

Abb.	Full term
LV	Left ventricle
LVEF	Left Ventricular Ejection Fraction
MACCE	Major adverse cardiac and cerebrovascular events
MI	Myocardial infarction
MINOCA	Myocardial infacrtion with non obstructive coronary arteries
MOH	Ministry of health
MR	Mitral regurgitation
MRA	Mineralocorticoid receptor antagonist
NSL	Non-significant lesions
NSTEMI	non ST elevation myocardial infarction
OM	Obtuse Marginal
p.o.	Per os
PCI	Percutaneous Coronary Intervention
PPCI	Primary percutaneous coronary intervention
PPCI CC	Primary percutaneous coronary intervention capable center
PTCA	Percutaneous transluminal coronary angioplasty
RBBB	Right Bundle Branch Block
RCA	Right coronary artery
SaO_2	Oxygen Saturation
SFL	Stent for Life
SK	Streptokinase
STEMI	ST elevation myocardial infarction
SWMA	Segmental wall motion abnormalities
TC	Total cholesterol
Tch	Total cholesterol
TG	Triglycerides

List of Abbreviations *(Cont...)*

Abb.	Full term
TIMI	*Thrombolysis in Myocardial Infarction*
TT	*Thrombolytic therapy*
UA	*Unstable angina*
UFH	*Unfractionated Heparin*
URL	*Upper Refence Limit*
VSR	*Ventricular septal rupture*

ABSTRACT

Patients who arrived at a PCI-capable center and were treated by a primary PCI had significant reduction in MACCE and all cause mortality during their hospital stay compared to those who received thrombolysis at a non-PCI capable center.

Follow up data at 6 months included bleeding, re-infarction, Angina or HF requiring re-hospitalisation, stroke and all cause mortality.

Patients who arrived at PCI-capable center and were treated by a primary PCI had significant reduction in re-infarction, Angina and HF requiring re-hospitalisation and all cause mortality compared to those who arrived at a non-PCI capable center and received thrombolysis and those who were transferred from a non-PCI to a PCI-capable center for the purpose of a primary PCI.

Keywords: *Thrombolysis in Myocardial Infarction - ST elevation myocardial infarction*

INTRODUCTION

Worldwide, coronary artery disease (CAD) is the single most frequent cause of death. Over seven million people every year die from CAD, accounting for 12.8% of all deaths. Every sixth man and every seventh woman in Europe die from myocardial infarction. The in-hospital mortality of STEMI patients in the national registries of the European society of cardiology (ESC) countries varies between 6% and 14% *(Steg et al., 2012)*.

Reperfusion therapy is the cornerstone of the treatment of patients with acute STEMI. It aims at reducing mortality and morbidity by achieving patency of the epicardial infarct related artery and by restoring myocardial tissue perfusion either pharmacologically or mechanically *(Ryan et al., 1999).*

Percutaneous coronary angioplasty was first developed in 1977 by Andreas Gruentzig. The first procedure took place Friday Sept 16, 1977 at Zurich, Switzerland **(Meier et al., 2003).** Primary percutaneous coronary intervention (1ry PCI) is now classified as class I indication in STEMI in the guidelines of the European Society of Cardiology (ESC) *(Ibanez et al., 2017).*

However, many hospitals all over the world do not have CathLabs that are available and functioning with On-Call teams with primary PCI program 24/7, so they either give fibrinolysis or transfer the patients to a tertiary center to undergo a primary PCI (PPCI).

There is no definite protocol regarding the management of STEMI patients in Egypt with a remarkable variability between different hospitals.

Till the time being there is no precise data available regarding the management and outcomes of patients presented with STEMI in East Cairo hospitals. This Study was undertaken in East Cairo hospitals to track the different aspects of the current clinical management and the clinical outcomes of STEMI patients.