Pilot Study to Predict Future Cardiovascular Events by Novel 3D-Echocardiograhy Global Area Strain in STEMI Patients Managed by Primary PCI

Thesis

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List of Abbreviations

Abb.	Full term
3D	*Three dimensional*
3DE	*Three dimensional echo*
ACAD	*Atherosclerotic coronary artery disease*
ACEI	*Angiotensin converting enzyme inhibitor*
ACR	*Area change ratio*
AFI	*Automated functional imaging*
AMI	*Acute myocardial infarction*
AS	*Area strain*
AUC	*Area under curve*
BMS	*Ber metal stent*
CABG	*Coronary artery bypass grafting*
CBC	*Complete blood count*
CKMB	*Creatine kinase myocardial fraction*
CKT	*Creatine kinase total*
CMR	*Cardiac magnetic resonance*
CO	*Cardiac output*
COPD	*Chronic obstruction pulmonary disease*
CT	*Computerized tomography*
CTN	*Cardiac troponine*
D	*Diagonal*
DAPT	*Dual antiplatelet therapy*
DES	*Drug eluting stent*
DM	*Diabetic mellitus*
DSE	*Dobutamine stress echo*
ED mass	*End diastolic mass*
EDV	*End diastolic volume*
EF	*Ejection fraction*

List of Abbreviations (Cont...)

Abb.	Full term

ES mass ..... *End systolic mass*
ESV ..... *End systolic volume*
EU ..... *European Union*
FH ..... *Family history*
FMC ..... *First medical contact*
FPS ..... *Frames per second*
FR ..... *Frame rate*
GAS ..... *Global area strain*
GCS ..... *Global circumferential strain*
GLS ..... *Global longitudinal strain*
GPSL ..... *Global peak longitudinal strain*
GRS ..... *Global radial strain*
H ..... *Heart failure*
HR ..... *Heart rate*
HTN ..... *Hypertension*
IHD ..... *Ischemic heart disease*
IRA ..... *Infract related artery*
JVP ..... *Jugular venous pressure*
KFT ..... *Kidney function tests*
LAD ..... *Left anterior descending*
LBBB ..... *Left bundle branch block*
LCX ..... *Left circumflex*
LFT ..... *Liver function tests*
LS ..... *Longitudinal strain*
LVEDD ..... *Left ventricular end diastolic diameter*
LVEF ..... *Left ventricular ejection fraction*
LVESD ..... *Left ventricular diameter end systolic diameter*

List of Abbreviations (Cont...)

Abb.	Full term
LVH	*Left ventricular hypertrophy*
LVM	*Left ventricular mass*
MACE	*Major adverse cardiovascular events*
MBG	*Myocardial blush grade*
MI	*Myocardial infarction*
MR	*Mitral regurgitation*
NSTEMI	*Non ST-elevation myocardial infarction*
NYHA	*New York Heart Association*
OM	*Obtuse marginal*
PCI	*Percutnaeous coronary intervention*
PDA	*Posterior descending artery*
PL	*Posterolateral artery*
PND	*Paroxysmal nocturnal dyspnea*
PTB	*Pain to balloon*
PTCA	*Percutaneous transluminal coronary angioplasty*
RCA	*Right coronary artery*
ROI	*Region of interest*
RWMA	*Resting wall motion abnormality*
S	*Strain*
SAX	*Short Axis*
SD	*Standard deviation*
SR	*Strain rate*
STE	*Speckled tracking echo*
STEMI	*ST-Segment elevation myocardial infarction*
SV	*Stroke volume*
SWMA	*Segmental wall motion abnormality*

List of Abbreviations (Cont...)

Abb.	Full term
TDI	*Tissue Doppler imaging*
TIMI	*Thrombolysis in myocardial infarction*
TSI	*Tissue synchronization imaging*
TVI	*Tissue velocity imaging*
TVR	*Target vessel revascuarlization*
URL	*Upper reference limit*
VA	*Ventricular arrhythmia*
WMSI	*Wall motion score index*

INTRODUCTION

Atherosclerotic coronary artery diseases (CAD) which is a leading cause of death worldwide, is on the rise and has become a true pandemic that respects no borders ***(Schunemann et al., 2008).*** CAD is responsible for 47% of all deaths in Europe women and 40% in the EU ***(European Heart Network, 2012).*** However, results from reports do suggest that mortality and morbidity from CAD is leveling, especially in younger adults ***(Ford and Capewell, 2007; Vander Stichele et al., 2008).***

Several studies have demonstrated a benefit from myocardial reperfusion, with reduced infarct size and associated improvement in later regional and global ventricular function ***(Sutton and Sharpe, 2000)***.

Primary PCI is the treatment of choice for acute coronary syndrome with ST elevation myocardial infarction; but it is unclear whether it has also benefit on left ventricular function remodeling especially in relation to time delay to primary PCI that may affect patients morbidity ***(Saeed et al., 2012)***.

Typically myocardial infarction allows significant architectural changes in composition, shape, and contractile function of myocardium. Especially left ventricle which is the major contributor to the contractile function of the heart, so it