Study of in hospital course of acute coronary syndrome among young Egyptian patients

Protocol of thesis

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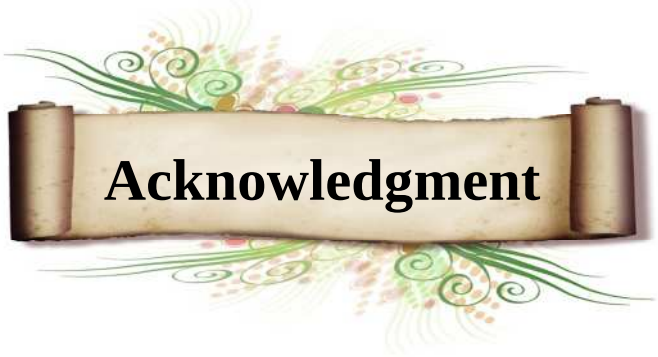

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List of Abbreviations

ACC ····· American College of Cardiology

ACEI…….Angiotensin converting enzyme inhibitor

ACS····· Acute coronary syndrome

AMI····· Acute myocardial infarction

BMI……Body mass index

CABG…….coronary artery bypass grafting

CAD……coronary artery disease.

CCS…… Canadian Cardiovascular Society

CHD····· Coronary heart disease

CRACE ····· Chinese Registry of Acute Coronary Events

CVD ····· Cardiovascular diseases

CCU……Coronary care unit

DBP……diastolic blood pressure

ECG……Electrocardiogram

EHS-ACS ···· Euro Heart survey for Acute Coronary Syndrome

ESC····· European Society of Cardiology 1

IRA ····· Infracted related artery

LAD……..Left anterior descending coronary artery

LCX……..left circumflex coronary artery

LMCA……..Left main coronary artery.

LMWH····· Low molecular weight heparin

LVEF ····· Left ventricular ejection fraction

NSTE-ACS ·· Non ST segment elevation acute coronary syndrome

PCI……. ..Percutaneous coronary intervention

RCA……..Right coronary artery.

SBP……...systolic blood pressure

SK…… Streptokinase

SOB……shortness of breath

STEMI…… ST segment elevation myocardial infarction

SWMSI…….segmental wall motion score index

TIMI…… Thrombolysis in myocardial infarction

UFH…… Unfractionated heparin

URL……upper reference limit

Introduction

Acute coronary syndrome (ACS), encompassing a range of disorders from unstable angina through non ST elevation to ST elevation myocardial infarction, is a leading cause of death in the world in both developed and developing countries ***(Reddy KS et al., 2004).***

There are also limited data on the frequency of myocardial infarction (MI) in younger subjects. In the Framingham Heart Study, the incidence of an MI over a 10 year follow-up was 12.9/1000 in men 30 to 34 years old and 5.2/1000 in women 35 to 44 years old ***(Kannel et al., 1984).***

The incidence of MI was eight to nine times greater in men and women aged 55 to 64 years. In other studies, 4 to 10 percent of patients with MI were ≤40 or 45 years of age ***(Doughty, 2002).***

The prevalence of coronary heart disease (CHD) in younger subjects is difficult to establish accurately since it is frequently a silent process. The frequency with which this occurs was examined in an autopsy study of 760 young (age 15 to 34 years) victims of accidents, suicides, or homicides ***(McGill et al., 2000).***

Despite the large and expanding elderly population presenting for ACS care, existing evidence is limited and

insufficient to guide management in this subgroup, to the same degree of certainty as in younger populations ***(Alexander KP et al., 2007).***

In two series of patients with CHD at ≤40 years of age, women comprised 5.6 and 11.4 percent of patients ***(Cole et al., 2003).***

Registries and surveys have the potential to define the 'gaps' between evidence and practice as well as implementation of guidelines ***(Bassand et al., 2005).***

Aim of the Work

1. To study the demographic details of the young patients below 40 years old presenting with acute coronary syndrome.

2. To assess clinical, angiographic profile and interventional outcome in young patients below 40 years old with ACS during hospital admission.

ACS and definition of Myocardial infarction

Acute coronary syndrome encompasses a spectrum of coronary artery diseases, including unstable angina, STEMI, and non-STEMI ***(Suraj et al., 2005).***

According to WHO's definition, a myocardial infarction occurs if at least two of three criteria are fulfilled:

1. Typical ischemic chest pain.
2. Raised concentrations of serum Creatine kinase-MB.
3. Typical electrocardiographic findings, including development of pathological Q-waves ***(Tunstall-Pedoe, 2001)***.

However, Creatine Kinase-MB is not a sensitive marker of myocardial necrosis. Therefore, application of the WHO definition in clinical practice results in several patients erroneously diagnosed.

For purposes of risk stratification and subsequent treatment, a sensitive detection of cardiac injury is needed. Assays are available for much more sensitive detection of (minimal) myocardial damage, including assays of cardiac troponins T and I, which are highly specific assays of cardiac troponins T and I, which are highly specific ***(Wu et al., 1999).*** These developments formed the basis of revised definition of myocardial infarction as recently proposed by the European society of cardiology (ESC) and the American college of

cardiology (ACC) in 2000.

ESC/ACC definition of myocardial infarction:

Any of following criteria satisfies diagnosis of an acute, evolving or recent myocardial infarction:

1. Typical rise and gradual full (troponin) or more rapid rise and fall (creatine kinase MB) of biochemical markers of myocardial necrosis with at last one of the following:

   A. Ischemic symptoms.

   B. Development of pathological Q waves on ECG.

   C. ECG changes indicative of myocardial ischemia (ST segment elevation or depression).

   D. Coronary artery intervention (e.g. coronary angioplasty).

2. Pathological findings of acute myocardial infarction.

   This definition fits with patient's clinical course.

Acute coronary syndrome (ACS) among young adults is relatively low when compared with older population.(Anderson R E et al,2008)

The prevelance of young patients of less than 40 to 45 years of age among ACS patients is variable depending on the

population studied and genrally ranges from less than 2 to 10 %.(Marillas p,2007)

It has been observed that there is a high prevalence of current smoking, hyperlipidemia,obesity and family history of coronary artery disease among young ACS patients and the clinical outcome in these group of ACS patients is better than older population.(Chua S K et al, 2010)

Classification of acute coronary syndrome:

Acute coronary syndromes result from acute obstruction of a coronary artery. Consequences depend on degree and location of obstruction and range from unstable angina to non-ST-segment elevation MI (NSTEMI), ST-segment elevation MI (STEMI), and sudden cardiac death.

Classification is based on ECG changes and presence or absence of cardiac markers in blood. Distinguishing NSTEMI and STEMI is useful because prognosis and treatment are different. (***James Wayne W, 2007).***

Unstable angina :

(Acute coronary insufficiency, pre-infarction angina) is defined as:

- Rest angina that is prolonged (usually > 20 min).
- New-onset angina of at least class III severity in the Canadian Cardiovascular Society (CCS).