Postoperative Complication in Overweight Patients Undergoing Coronary Artery Bypass Graft Surgery

Thesis

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دراسة في مضاعفات ما بعد جراحة القلب المفتوح وزراعة الشرايين بالقلب للمرضي الذين يعانون من زياده بالوزن

رسالة

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List of Abbreviations

ACC	American College of Cardiology
AHA	American Heart Association
ATP	Adenosine-5-triphosphate
BITA	Bilateral Internal Thoracic Artery
BMI	Body Mass Index
CA	Coronary angiography
CABG	Coronary Artery Bypass Grafting
CAD	Coronary Artery Disease
CHD	Coronary Heart Disease
CVD	Coronary Vascular Disease
CCS	Canadian Cardiovascular Society Angina Classifications
COPD	Chronic Obstructive Pulmonary Disease
CPB	Cardiopulmonary Bypass
CRI	Chronic Renal Impairment
CT SV	Connective Tissue Saphenous VEIN
CVD	Cardio Vascular Disease
DM	Diabetes Mellitus
DSWI	Deep Sternal Wound Infection
ECG	Electrocardiography.
EDD	End diastolic dimension
EF	Ejection Fraction.
ESD	End systolic dimension
FE test	Fisher Exact test
GEA	Gastroepiploic Artery
HF	Heart Failure
HTN	Hypertension
IABP	Intra Aortic Balloon Pump.
ICU	Intensive Care Unit
IEA	Inferior Epigastric Artery

INR	International Normalized Ratio.
ITA	Internal Thoracic Artery.
LAD	Left Anterior Descending artery.
LCA	Left Coronary Artery.
LIMA	Left Internal Mammary Artery.
LM	Left Main
LV	Left Ventricle.
LVEDP	Left Ventricular End Diastolic Pressure.
Max	Maximum
MI	Myocardial infarction
Min	Minimum
NO	Nitric Oxide
NPWT	Negative Pressure Wound Treatment
NYHA	New York Heart Association.
OPCAB	Off-Pump Coronary Artery Bypass
PCI	Percutaneous Coronary Intervention
PDA	Posterior Descending Artery.
PEEP	Positive End Expiratory Pressure
PTCA	Percutaneous Transluminal Coronary Angioplasty
RA	Radial Artery
RCA	Right Coronary Artery.
RIMA	Right Internal Mammary Artery
RSWMA	Resting segmental wall motion abnormality
SD	Standard Deviation
SVT	SupraVentricular Tachycardia.
SSWI	Superficial Sternal Wound Infection
TLR	Total Target Revascularization
VSD	Ventricular Septal Defects
VSR	ventricular septal rupture
WC	Waist Circumferance

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Introduction

Obesity is a great burden in developing countries as Egypt due to limited resources of health care services. More than one third of Egyptians are obese. Coronary artery bypass graft surgery (CABG) is necessary for many of them. The objective of this study was to investigate the association between obesity and post-CABG morbidity and mortality in Egyptian patients.

Coronary artery bypass graft surgery is a surgical procedure in which one or more blocked coronary arteries are bypassed by a blood vessel graft to restore normal blood flow to the heart. These grafts usually come from the patient's own arteries and veins .

Indications for CABG:

Class I indications for CABG from the American College of Cardiology (ACC) and the American Heart Association (AHA) are as follows:

1-Left main coronary artery stenosis >50%

2-Stenosis of proximal LAD and proximal circumflex >70%

3-Vessel disease in asymptomatic patients or those with mild or stable angina

4-Vessel disease with proximal LAD stenosis in patients with poor left ventricular (LV) function

5-1- or 2-vessel disease and a large area of viable myocardium in high-risk area in patients with stable angina(1,2).

Considering the impact of obesity on mortality and morbidity after coronary artery bypass graft surgery (CABG), we had to investigate the association between central obesity and the body mass index (BMI) and the post-CABG mortality and morbidity.

BMI was measured as weight in kilograms divided by height in square meters (Kg/m2). Patients with BMI ≥30 Kg/m2 were classified as obese and those with BMI < 30 Kg/m2 considered as non-obese. Waist circumference (WC) was measured by placing a tape measure horizontally at the level of the iliac crest in non-stress situation. WC ≥102 cm in men and 88 cm in women was considered as obesity, and WC < 102 cm in men and < 88 cm in women was defined as non-obesity(3,4).

Sternal wound infection, chest infection, stroke and prolonged ICU and hospital stay are most common complications that occurred post CABG in obese patients.

There are many controversies about the effect of BMI on postoperative cardiac complications. Reeves et al. found no significant correlation between obesity and mortality following cardiac surgery (6).

the significant increase in wound infection is found in many studies. a study by Simopoulosetal. revealed that a high BMI was associated with postoperative superficial, deep sternal wound infection and postoperative mortality (7).

Engelman et al. showed increased morbidity and mortality in patients with low BMI following cardiac surgery (5). In this study, we had to identify if a patient's BMI could be a predictor of risk of postoperative complications in CABG.

Aim of the Work

This is prospective study to review the impact of obesity on morbidity and mortality on patients undergoing coronary artery bypass graft surgery

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