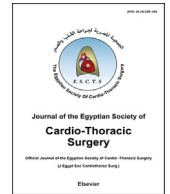


HOSTED BY



Contents lists available at ScienceDirect

## Journal of the Egyptian Society of Cardio-Thoracic Surgery

journal homepage: <http://www.journals.elsevier.com/journal-of-the-egyptian-society-of-cardio-thoracic-surgery/>

# Impact of obesity on early cardiac surgical outcomes in Egypt: Early outcomes of coronary artery bypass graft surgery



Amany G. Abdallah\*, Mostafa A. Elnewihy, Alaa I. Brik, Abdel Megeed M. Salem

Department of Cardiothoracic Surgery, Zagazig University, Egypt

## ARTICLE INFO

## Article history:

Received 24 July 2017

Received in revised form 1 August 2017

Accepted 3 August 2017

Available online 5 August 2017

## Keywords:

Obesity

Coronary artery bypass

Outcomes

## ABSTRACT

**Background:** 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.

**Methods:** This prospective study was conducted on 162 patients indicated for isolated CABG in Zagazig Univeristy Hospitals and El Ahrar Hospital. The patients were classified into two groups according to Body mass index (BMI)  $\geq 30$  (obese, group 1,  $n = 81$ ) and  $BMI < 30$  (non-obese, group 2,  $n = 81$ ). In-hospital and after 6 months morbidity and mortality rates were compared between both groups.

**Results:** A total of 162 patients (35 females) with a mean age of  $54 \pm 8.5$  years (range = 33–70 years), mean BMI of group 1 and group 2, ( $34.2 \pm 3.9$ ) and ( $26.5 \pm 1.9$ ) respectively with range = 23–44.4 were included. Saphenous vein harvest (SVH) site infection, intensive care unit (ICU) and in-hospital stay were significantly increased in patients with  $BMI \geq 30$  with ( $p$  value = 0.025, 0.02, 0.04) respectively.

**Conclusions:** Obesity is associated with SVH site infection and long ICU and in-hospital stays but not associated with other morbidity or mortality by the sixth post-operative month.

© 2017 The Egyptian Society of Cardio-thoracic Surgery. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## 1. Introduction

More than one third of Egyptians are obese [1]. There is an increasing number of them who had risk for coronary artery disease (CAD) [2]. Obesity increases adverse cardiac events in many ways. These may be indirectly mediated through risk factors associated with metabolic syndrome like dyslipidemia, hypertension and glucose intolerance or effects from sleep disorders [3]. The scary rise in obesity and its concomitant co-morbidities is a reflection of the recent changes in dietary habits and sedentary life in many developing countries, especially Egypt [4]. Coronary artery bypass graft (CABG) surgery is necessary for many of these obese patients with CAD. Review of published literature, regarding impact of obesity on outcomes after CABG shows great contradiction. Several studies concluded that obese patients have

\* Corresponding author.

E-mail address: [amanygouda10@gmail.com](mailto:amanygouda10@gmail.com) (A.G. Abdallah).

Peer review under responsibility of The Egyptian Society of Cardio-thoracic Surgery.

higher incidence of morbidity and mortality after CABG [5]. Other studies, however, found that obesity had no negative effect on outcomes after CABG [6]. In another study, obesity paradox was proved where mortality after CABG in overweight, obese and extremely obese patients was lower than in the underweight patients [7,8]. Zeinah and Nagaage documented that (obesity paradox) is not supported in cardiac surgery patients due to what is called (obesity parallax) because of applying different Body mass index (BMI) classification systems [9]. So we conducted our study to investigate the association between obesity, in terms of BMI classification and post- CABG morbidity and mortality in Egyptian patients.

## 2. Patients and methods

Our study included 162 adult cardiac patients candidate for isolated CABG surgery who were referred to Zagazig university hospitals and el Ahrar Hospital, Zagazig, Egypt between December, 2014 and June, 2016. All the patients were followed up in-hospital and for a six –month follow up period; follow up was completed by all the patients. The exclusion criteria included, age < 18, concomitant cardiac procedures, severe co-morbidities and left ventricular ejection fraction (LVEF) < 35%. Our study population was classified into two groups according to BMI, with the obese group [1] had BMI  $\geq$  30 and non-obese group [2] had BMI < 30. Preoperative, operative and post-operative data were prospectively collected and entered into computerized data base.

### 2.1. Data collection and definitions

Preoperative data, including, age, sex, current smoking, Diabetes mellitus (DM), Hypertension (HTN), Chronic chest problems, History of inhaled bronchodilator treatment and pulmonary function test, Thyroid disease, either hypothyroidism or less commonly hyperthyroidism indicating therapy, Peripheral vascular disease (PVD), History of vascular pathology or operation, and Previous myocardial infarction (MI). Preoperative investigations included, coronary angiography with number of diseased coronaries and left main disease, echo finding including, ejection fraction (EF), left ventricular diastolic dysfunction (DD), right ventricular hypertrophy (RVH) and pulmonary hypertension (PHT) and (ECG). Laboratory investigations included; CBC, LFT, KFT, bleeding profile and lipid profile. Also, requirement for preoperative inotropic support and/or Intra Aortic Ballon Pump (IABP).

Operative data included, operative status of the patient, on pump or off pump surgery, aortic cross clamp (ACC) and cardiopulmonary bypass (CPB) times, type of conduit used and need for inotropic support and/or IABP.

Post-operative data included the following; time of mechanical ventilation, amount of mediastinal drainage, ICU and in-hospital stay time and mortality which is defined as death from any cause occurring during hospital stay. Post-operative complications included re-exploration for bleeding, arrhythmia, MI, diagnosed by new q wave on ECG and rise in CPK- MB  $\geq$  10%, neurological complications as cerebrovascular accident or transient ischemic attacks, pulmonary complications including pulmonary infection, atelectasis and re-intubation and wound problems including sternotomy wound infection and/or dehiscence and saphenous vein harvesting (SVH) site infection. Mediastinitis, diagnosed when deep sternal infection was present that required exploration of the wound with excision of tissues and treatment with antibiotics.

Six –month after discharge, patients were interviewed at outpatient clinic for follow up, they underwent clinical examination and history taking for any morbidity after discharge, also laboratory investigations and echo were done for them with collection of all these data.

### 2.2. Surgical technique

Conventional anaesthetic management was standardized for all patients. Standard CPB technique was used. Aortic and two stage right atrial cannulation was done with systemic hypothermia (32c). Internal mammary artery and saphenous vein were harvested conventionally. Intermittent antegrade cold blood cardioplegia was delivered every 25 min. Left internal mammary artery (LIMA) was the graft of choice for left anterior descending coronary artery (LAD) and saphenous vein grafts for the other anastomosis. Following distal anastomoses, proximal ones were done during reperfusion with a partial aortic occluding clamp. During CPB time, hematocrit levels were maintained above 20%. Two drains were inserted, one mediastinal and the other one in the left pleural space before closure of the chest. Patients were extubated in ICU after regaining conscious level and good motor power together with good arterial blood gases (ABG) analysis and hemodynamic stability. Regulation of blood glucose level was done by continuous intravenous insulin infusion to ensure its range between 170 and 200 mg/dl.

### 2.3. Statistical analysis

Data were described as mean  $\pm$  standard deviation (SD) for interval and count (%) for categorical variables. We used the chi-square test and fisher test for categorical variables as indicated. Student's t test was used for numerical variables. P value  $\leq$  0.05 was considered as statistically significant result. .

Download English Version:

<https://daneshyari.com/en/article/8668611>

Download Persian Version:

<https://daneshyari.com/article/8668611>

[Daneshyari.com](https://daneshyari.com)