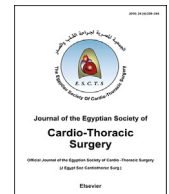


Contents lists available at [ScienceDirect](#)

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/>

Original article

## Predictors of in-hospital mortality in surgically treated valvular infective endocarditis cases at National Heart Institute, Egypt

Ahmed Elmasry, Ahmed M. Omran\*, Amr Elprince, Sameh Elameen, Mostafa M. Mansy, Ahmed S. Mahlab

National Heart Institute, Cairo, Egypt

### ARTICLE INFO

#### Article history:

Received 17 January 2017

Accepted 16 February 2017

Available online xxx

#### Keywords:

Infective endocarditis

Mortality

Predictors

### ABSTRACT

**Background:** The aim of this study was to review the surgical experience in the cardio-thoracic surgical department, National Heart Institute (NHI), Egypt regarding patients with native or prosthetic valve endocarditis and determining predictors of mortality.

**Methods:** A prospective study of fifty consecutive patients diagnosed with definite infective endocarditis (IE) and underwent cardiac surgery from September 2012 till September 2014 were included. We tested preoperative, intraoperative, and postoperative data as potential predictors of mortality.

**Results:** Rheumatic heart disease was the most common underlying cardiac disease ( $n = 27, 54\%$ ). Native valve endocarditis was present in 37 (74%) and prosthetic valve endocarditis in 13 (26%). Mean EuroSCORE II was 5.71%. The in-hospital mortality was 20%. Congestive heart failure ( $P = 0.014$ ), embolization ( $P = 0.011$ ), and periannular extension of infection ( $P = 0.029$ ) were independent predictors of in-hospital mortality. According to the ROC curve, EuroSCORE II  $> 5.93\%$  was associated with the best predictive value for in-hospital mortality (AUC: 0.813). In the group of patients selected for valve repair strategy, only one mortality (11%) was recorded and no recurrence occurred.

**Conclusions:** Surgery for IE continues to be challenging. EuroSCORE II has a good discrimination ability to predict in-hospital mortality in IE surgery. Satisfactory results can be obtained with valve repair in IE.

© 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

Infective endocarditis (IE) is a serious and life threatening disease with significant morbidity and mortality. Despite major advances in diagnostic technology, improvements in antimicrobial selection and monitoring and advances in surgical techniques, the morbidity and mortality due to IE remains high. Combination of aggressive antibiotic treatment and early surgical intervention has led to improved outcome and prognoses in recent years [1]. Previous studies have defined various clinical and laboratory findings, which have prognostic significance in patients treated for IE. These studies have shown that

\* Corresponding author.

E-mail addresses: [amamo77@yahoo.com](mailto:amamo77@yahoo.com), [amamo77@doctors.org.uk](mailto:amamo77@doctors.org.uk) (A.M. Omran).

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

<http://dx.doi.org/10.1016/j.jescts.2017.02.004>

1110-578X/© 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/>).

Please cite this article in press as: Elmasry A, et al., Predictors of in-hospital mortality in surgically treated valvular infective endocarditis cases at National Heart Institute, Egypt, Journal of the Egyptian Society of Cardio-Thoracic Surgery (2017), <http://dx.doi.org/10.1016/j.jescts.2017.02.004>

the outcome of endocarditis may be associated with a number of clinical variables, development of complications, echocardiographic findings, laboratory parameters, and the virulence of the causative microorganisms. However, some unpredictability between the results from different hospitals and countries are evident. This may be due to the differences between populations studied [2]. The aim of this study was to evaluate the predictors of in-hospital mortality in patients undergoing valvular cardiac surgery in the presence of IE.

## 2. Patients and methods

This is a prospective single center observational study of fifty consecutive patients, diagnosed with definite IE and underwent cardiac surgery in our cardiothoracic surgical department at National Heart Institute (NHI), Egypt, from September 2012 till September 2014. We monitored preoperative, intraoperative, and postoperative data as potential predictors of mortality.

In all cases, diagnosis was based on strict case definition fulfilling modified Duke's criteria in collaboration with the endocarditis team in our hospital.

### *Inclusion criteria:*

All IE patients, involving whether mitral, aortic or tricuspid valve, either isolated or combined, including native or prosthetic valve endocarditis.

### *Exclusion criteria:*

- Patients presented with irreversible septic shock with failed medical treatment.
- Patients with neurological insult as deep coma or intra-cranial hemorrhage.
- Patients with severe co-morbidities as mycotic aneurysm.
- Patients with Poor ejection fraction.

Data regarding demographics, preoperative clinical status, intra- and early postoperative course were collected prospectively. Operative mortality risk was assessed for every patient according to the European System for Cardiac Operative Risk Evaluation (EuroSCORE). Additional information about the disease, such as causative microorganism, intraoperative findings, and technical details of the surgical procedures performed, were obtained from a review of the hospital medical records.

Cases of infective endocarditis were classified according to the Duke Criteria. Endocarditis was labeled 'active' if the patient had fever and/or leukocytosis at the time of surgery or required surgical treatment before completion of a standard course of antibiotic treatment. Prosthetic valve endocarditis was defined as infection occurring on any type of tissue or mechanical valve device. Culture-negative endocarditis was present when no microorganisms could be identified either in serial blood cultures or in cultures from the explanted valvular tissue in patients presenting with a clinical picture of active endocarditis, particularly in the presence of a new regurgitant murmur, congestive heart failure and/or vegetation on echocardiogram.

### 2.1. Statistical analysis

SPSS (Statistical Package for the Social Sciences) version 20.0 was used for data analysis. Data were expressed as mean  $\pm$  SD or counts and percentages when appropriate. Univariate analysis was conducted using the Student's t-test for comparison of means and the Fisher's exact or chi-square tests for comparison of categorical parameters. Multivariate logistic regression analysis was used to depict variables that contribute independently to the event of mortality among our patients. Receiver operating characteristic (ROC) curve analysis was performed to determine the optimal cut-off value of EuroSCORE II that best predicted the mortality. A P value  $< 0.05$  was considered to be statistically significant.

## 3. Results

Our study group included 50 patients who were surgically treated for IE with different types of underlying cardiac disease mentioned in Fig. 1. There were 31 men and 19 women, aged 18–55 years (mean 35.16 years). Six patients (12%) had pre-existing comorbid conditions shown in Table 1. EuroSCORE II ranged from 1.23 to 36.99%, with a mean value of 5.71% (see pre-operative variables in Tables 2 and 3).

**Microbiology:** Blood culture was positive only in 24 patients (48%). In other 7 cases, causative microorganisms were identified either by tissue culture (5 cases) or serology (2 cases). Therefore, the infective agent was identified in 31 cases (62%) as shown in Fig. 2.

### 3.1. Operative variables

Surgical treatment was performed on elective basis (after 2 weeks of antibiotic therapy) in 32 patients (64%), on urgent basis (within first elective list) in 13 patients (26%), and on emergency (within 24 h) in 5 patients (10%). Detailed operative procedures and types of implanted valves are demonstrated in Table 4.

Download English Version:

<https://daneshyari.com/en/article/8668656>

Download Persian Version:

<https://daneshyari.com/article/8668656>

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