Reviewer’s report

Title: Preoperative Ejection Fraction As a Predictor of Survival After Coronary Artery Bypass Grafting: Comparison with a Matched General Population

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Reviewer: Hosam Fawzy

Reviewer’s report:

Medical therapy in patients with coronary artery disease (CAD) and advanced left ventricular dysfunction (LVD) carries a poor survival. Coronary artery bypass grafting (CABG) in these patients is associated with improved survival compared with medical treatment. Historically, CABG in patients with LVD has been associated with high perioperative mortality. However, major randomized control studies demonstrate improved survival in surgically treated patients with milder degrees of LV systolic dysfunction.

Title:
- The title does not cover the content of the study well as the study is showing other predictors of survival after coronary artery bypass grafting in addition to the preoperative Ejection Fraction like: Age, NYHA class, diabetes, chronic obstructive pulmonary disease, peripheral vascular disease, anemia, renal dysfunction, prior cardiac surgery, emergency operation, perioperative myocardial infarction, need for intra-aortic balloon pump and re-exploration.

Abstract:
- The abstract indicates the purpose of the study, patients and methods, most important results and conclusions.

Introduction:
The purpose of the study is clearly stated in the introduction.

Patients and Methods:
- The type of the study is mentioned.
- The study location is well described.

- Sufficient information is provided regarding the methods used.

- However, the authors compared their patients with the general population. The left ventricular function (ejection fraction) of the general population is not known. It is also not known if any of them had ischemic heart disease or not?

- The general population was matched only for age, sex and year of operation but not to their ventricular function which is the subject of the study.

- It is not even known the cause of death in either group.

- This together with the retrospective method of the study, increase the weakness of the study.

Statistical review:
- It is important that this manuscript to be seen by an expert Statistician.

Results:
- Preoperative characteristics of the study subjects as shown in table 1 demonstrate that patients with a low EF had a higher significant incidence of preoperative comorbid conditions such as diabetes, New York Heart Association class III or IV, COPD, renal dysfunction, PVD, and/or reoperation than did those with normal EF. Those factors may have contributed to the higher incidence of early mortality in this group and increase the bias in the study.

- The cause of death is not mentioned.

- Some data are missing in Tables number 4 &5.

Discussion:
- The discussion is well balanced.

Conclusion:
- The authors conclude that the low pre-operative EF is a predictor of early and late mortality after CABG. They did not mention the other predictors as shown in the study.

References:
- References are properly selected and cited. They are reasonably current.

- However references number 22 and 23 are mentioned in the reference section but are not cited in the text.
- The reference number 21 is cited for the first time in page number 10 line number 1 after the references number 24 & 25 which are cited for the first time in page number 9 lines number 22 & 24.

Quality of written English:
English language is very clear.

Level of interest:
The article is of importance in its field.

Declaration of competing interests:
- I and the first author Dr. Mohammed Soliman used to work together. We did not work together since 15 years.
- I declare that I have no competing interests.

What next?
I would recommend publication after the authors respond to the revisions.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I declare that I have no competing interests.