Author’s response to reviews

Title: β-blockers after myocardial infarction and 1-year clinical outcome – a retrospective study

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Dear Editor in Chief and Reviewer,

BCAR-D-19-00354

β-blockers after myocardial infarction and 1-year clinical outcome – a retrospective study

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BMC Cardiovascular Disorders

Please find our comments to the concerns expressed by the reviewer below, and also find the suggestions of changes we made to the manuscript to adhere with these concerns, these are made using track changes so that these are easily identifiable in the uploaded manuscript. We hope you find that these adequately address the concerns raised by the reviewer and look forward to your decision.
This study describes the Swedish attitude to administer beta-blockers only to a minority of patients with myocardial infarction at the moment of discharge from hospital. The Swedish recommendations are quite different compared to those of the European Society of Cardiology.

The topic is interesting. It is aimed at investigating the reasons why a growing number of patients were discharged without a β-blocker, rather than justifying this underuse. I have a few suggestions to improve this research paper, namely:

- **Introduction.** Added that discontinuation of beta-blocker therapy is not sufficiently addressed in any guideline to date. The American guidelines suggest continuation of beta-blockers for 3 years for MI patients with normal ventricular function. Conversely, the European guidelines do not discuss discontinuation.

Answer: thank you for this valuable comment, we have added a section about the American guidelines, please see the introduction and the added text and references done using track Changes.

- **Results.** Any statistical difference in outcomes when comparing the two genders? One may argue that some trials suggested that beta-blockers improve survival only in males, but not in females.

Answer: The number of patients that we have outcome data for is so small, so we initially did not find them adequate to do statically comparison on. We now divided both groups (non-beta Table 1 and Beta Table 1) into men and women as shown in the table below, and as you can see the numbers are small and none reach significance although both groups show numerically more benefit for men (both for non-beta and bet use) in regards of all cause re admission. However we think it might be to uncertain to draw any conclusion from these numbers, and hope you agree on this (The table can't be inserted, but has been uploaded as suplementary material).

- **Results.** As to the type of beta blocker at the moment of discharge, is there any significant difference in outcomes between selective beta-1 antagonists and non-selective beta blockers?
Answer: This would have been interesting, however, all patients were treated with beta-1 antagonists so we don’t have the data to do this analysis.

- In the limitations section at the end of the paper, added that this is a retrospective study, with the usual limitations of this kind of researches.

Answer: The limitation section has been updated according this concern, please see the section limitation.

- Discussion. The matter of debate is controversial. According to the actual scientific evidence, it is reasonable saying that benefit of beta-blocker therapy is highly dependent on the baseline risk of a patient. In this respect β-blockers are likely to be effective particularly for patients with larger infarcts, chronic heart failure, ventricular dysfunction, or incomplete coronary revascularizations. In this respect cite Ko DT, et al. Circ Cardiovasc Qual Outcomes 2018;11:e004678, please.

Answer: The reference has been added and the discussion has been updated with a part regarding effectivity of beta-blocker for patients with larger infarcts, chronic heart failure, ventricular dysfunction, or incomplete coronary revascularizations.

Best Regards

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