Author's response to reviews

Title: Coronary artery bypass grafting in young patients - a perioperative challenge

Authors:

Felix Fleissner (fleissner.felix@mh-hannover.de)
Gregor Warnecke (Warnecke.Gregor@mh-hannover.de)
Serghei Cebotari (Cebotari.Serghei@mh-hannover.de)
Axel Haverich (Axel.Haverich@mh-hannover.de)
Issam Ismail (Ismail.Issam@mh-hannover.de)

Version: 2
Date: 10 March 2015

Author's response to reviews: see over
Response to Reviewer 1:

Reviewer’s report:
A 3.5 year experience with myocardial revascularisation in 126 consecutive patients below the age of 50 is reported. The conclusions are that this is a high risk patient cohort, frequently presenting as emergency with however good results of the operation despite the high proportion of arterial conduits used. An important topic that undoubtedly deserves attention. Nice series and very respectable results!

Thank you for your kind comment.

General:
Comment 1: You dwell on the long term results and the relevance of the use of arterial conduits but you have elected to show none of your own results. It would be helpful to see a discussion of the reasons why one might not elect to do a complete arterial revascularisation in these patients rather than to assume that they do better afterwards. Emphasis should be placed on the fact that these tend to be sick patients! Incidentally, with a poor long term outcome for various reasons! – is arterial revascularisation really justified? You may want to change the title of the paper!? Answer to comment 1: We thank the reviewer for this valuable comment. We added the decision-making process to the discussion. It is true, that a complete arterial revascularization is not the best option for every younger patient. We elucidate about the contraindications for complete arterial revascularization in the discussion.

Comment 2: The structure of the paper needs revision. You present results in the methods section and the results section contains interpretations that belong into the discussion. Answer to comment 2: We changed the text accordingly.

Comment 3: It would be helpful to the reader to see some form of interpretation of your “short term” results with respect to the results in a matched population of either the more typical age or the same degree of sickness. The difficulty here is of course, that your patient population is very heterogeneous (MVR, Dor, ECLS), a fact that needs discussion and may be a subgroup analysis. Answer to comment 3: It is true that propensity matching would be helpful to compare our results in younger patients to those of a older age. However there are certain points that makes the matching to a similar cohort very difficult. At first, propensity matching would require finding a population that matches in mortality and morbidity. However, our patients group is very heterogenous with MVR, DOR, IABP and ECLS. Excluding these patients would change the outcome significantly (Mortality 0%) and would lead to a completely false impression. A match in assumed mortality and morbidity is also difficult to find for older patients since mortality and morbidity are age dependent in the first place. Another point that needs to be addressed is the patient’s presentation. A lot of our patients present in an emergent setting. Even more so, we have a high incidence of explicit complications in our group (e.g. iatrogenic dissections during PCI, etc.). This makes it even more difficult to perform propensity matching. We are aware of the fact that a matched control group is a significant drawback to our study and added this fact to the discussion.
Finally, the English needs some looking over!

Specific:
Introduction:
Comment 4: You compare PCI to CABG but fail to inform the reader, whether these are exclusively elective cases. There may well be a point in intervening a culprit lesion in the acute setting in order to bridge the patient to a complete arterial revascularisation in an elective setting at a later stage!
Answer to comment 4: We thank the reviewer for this valuable comment. As a matter of fact, we found a high rate of iatrogenic complications during the PCI prior to surgery. The intervention of a culprit lesion for bridging to surgical revascularization is part of the decision making scheme (Figure 2)

Methods:
Comment 5: Move the results to the results section.
Answer to comment 5: Done!

Comment 6: Change kidney to renal.
Answer to comment 6: Done!

Comment 7: Given that you concentrate on the young age of your patients it may be sensible to give median ages with ranges rather than averages.
Answer to comment 7: We changed mean to median.

Results:
Comment 8: Move the interpretation to the discussion.
Answer to comment 8: Thank you fro the comment, we re-structured the whole manuscript.

Comment 9: It may be sensible to exchange ECMO for ECLS nowadays.
Answer to comment 9: Done.

Comment 10: Please report 30 day mortality as well as in-hospital mortality!
Answer to comment 10: Done, we now report the 30 day and in-hospital mortality.

Discussion:
Comment 11: The reader would like to know how many of your patients were symptomatic with respect to their CAD prior to presenting to your department.
Answer to comment 11: We added this information to the text (See Table 4).

Comment 12: In the discussion of patency and long term results neither the typical prognosis of young patients with complex 3VD nor the results of arterial revascularisation in the acute setting are mentioned but are essential for the interpretation of your results. (2 cases of redo surgery, 12% EF <35%, 9 patients with CPR) I miss the description of your criteria to decide on which grafts to use. Especially with respect to the results and possible complications of the procedure this is important to the reader. (only 20% were diabetics!)
Answer to comment 12: We thank the reviewer for this comment. We changed the text accordingly and added this to the discussion and a Figure (Figure 2). We also added an abstract about the pre-operative course of our patient’s collective. In fact, of these 36 patients who received an intervention prior to CABG, 3 patients presented with iatrogenic dissections in the target vessels and were subsequently referred to CABG, 4 patients had undergone an unsuccessful PCI attempt in one or two target vessels prior to referral to operative revascularization. 10 patients presented with in-stent re-(re) stenosis in stented vessels. Only one patient received a PCI (without stent implantation) of the culprit lesion (RPLA) directly prior to surgery as a bridging therapy to surgical revascularization in acute myocardial infarction (STEMI). One patient was reanimated extrahospitally and received a lysis therapy. The patient received a coronary angiogram after admission to the hospital which showed a 3 vessel disease. Another patient with an iatrogenic dissection of the LAD received ReoPro directly prior to surgery as a rescue attempt.

Comment 13: TAR has not been explained in the text.
Answer to Comment 13: We added a short description of the performed revascularization procedure to the Methods part. We also explained the term TAR as total arterial revascularization. We also added a passage explaining the performed operative techniques.

Comment 14: You state that these patients are prone to complications – put this into perspective with the results in older patients!
Answer to comment 14: By this term we rather meant that our collective is a complicated one. We changed the text accordingly to make it more understandable. We thank the reviewer for this valuable comment.

Comment 15: You have a very interesting subgroup – the patients who went onto ECLS support. It may be interesting for the reader to find out more about these patients.
Answer to comment 15: We added a table of a short description about these patients. We tried to add all the necessary information. However, the clinical course of this subgroup is rather special and varies between the individual patients.