Author’s response to reviews

Title: The predictive value of the renal resistive index for contrast-induced nephropathy in patients with acute coronary syndrome

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Author’s response to reviews:

Dear editors and reviewers,

Thanks for your comments regarding our manuscript “The predictive value of the renal resistive index for contrast-induced nephropathy in patients with acute coronary syndrome” (ID: BCAR-D-18-00739). Those comments were very valuable and helpful for revising and improving our manuscript. We have studied the comments carefully and made corresponding corrections, which we hope will meet with your approval. The changes are highlighted in red in the revised version of our manuscript.

Our point-to-point responses to the editor and the reviewers’ comments are shown below.

We are looking forward to your reply soon! Thanks again.

Best Regards,

Ning Tan

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The following is a point-to-point response to the two reviewers’ comments.

Responses to the Reviewers’ comments

Responses to Reviewer 1

Comment #1: Dear author, the idea is very interesting, but as a preliminary draft, I would recommend making some changes: First of all, I recommend making changes to the text in order to use more scientific English;

Response:

Thanks for your agreement on this innovative type of paper. According to your suggestion, we reread the manuscript carefully and improve some expression, and seek professional help in revising this manuscript from a reputable English language editing service (https://app.editage.cn/?type=individual), which provide a certificate that can demonstrate the language in our paper has been professionally edited and verified. It is listed in supplementary document.

Comment #2: I suggest widening the conclusions of the article;
Response:

Thanks for your helpful suggestion. According to your suggestion, we revised our conclusions of the manuscript (page 14-15, line 275-282).

Comment #3: I would suggest you to explain in detail which are the risk factors associated with the patient' CIN, and also to illustrate in detail the new renal damage biomarkers;

Response:

Thanks for your helpful suggestion. The risk factors associated with the patient' CIN had been mention in the four paragraph of the discuss section, and also seen in table 3 (Univariate and multivariate analyses of risk factors for CIN.) The topic of differences or relationship between the new renal damage biomarkers and RRI is very attractive, as you suggested, our next work would focus on the concern. We hope that these works help readers or researchers to understand the mechanism of CIN.

Comment #4: I think it is also important to correlate the results with the dose of contrast administered

Response:

Thanks for your helpful suggestion. The dose of contrast administered was important for risk stratification. 1 score for 100ml contrast medium volume in Mehran risk scores. And the dose of contrast administered was positively corelated with SYNTAX score. According to your suggestion, we newly enrolled the variables such as contrast volume and contrast volume/kg in the multivariate logistic regression analysis (Table3), but the result showed no difference. That may be because that we enrolled a large number of patients with STEMI in our study, most of them required primary PCI and consumed a relatively small amount of CM (≤ 100 ml, in general). We may enroll more people even with complex coronary lesions to further clarify the effect contrast dose on RRI next time.
Responses to Reviewer 2

Comment #1: how many patients were excluded due to the pre-specified study criteria? Add to the results (eventually with a flow-chart figure).

Response:

Thanks for your helpful suggestion. According to your suggestion, we add the patients were excluded in first paragraph of the results section(Page 9, line 163-165), and showed with a flow-chart figure (Figure1.Flow chart showing the population selection process in the study).

Comment #2: baseline chronic kidney disease was not an exclusion criteria, however the mean eGFR shows a population with almost normal/mildly reduced renal function. The authors should add in Table 1 the number(percentages) of patients with eGFR<60 and eGFR<30.

Response:

Thanks for your suggestion. According to your suggestion, we add the number(percentages) of patients with eGFR<30, 30≤eGFR<60 and eGFR>60 in Table1.

Comment #3: the study enrolled a significant proportion of patients with STEMI (40-50%). Since coronary angiography and PCI should be performed in an emergency, how long was the calculated/estimated protocol-related PCI delay in these cases?

Response:

Thanks for your suggestions. In general, the examination was performed at the moment when preparing for primary PCI, and the whole examination cost about 5 minutes. According to your suggestion, we added the relative corrections in the renal ultrasonic doppler examination section (Page 8, line 143-144).
Comment #4: The authors should mention the study approval of the local Ethic Committee.

Response:

Thanks for your suggestions. According to your suggestion, we correct the relative mention in the Population selection as” The study protocol was approved by the ethics committee of our hospital, and all of the enrolled patients provided written informed consent to participate in the study.” (Page 6, line 104-105).

Comment #5: The population enrolled in the study can be considered with "high-normal" RRI values, condition which seems in line with patients' age, less with the good eGFR values. The author should discuss: a) whether it can be due to the acute setting of a coronary syndrome (hypotension, cardiac arrest, previous use of acetylsalicylic acid or other drugs) or preexisting conditions; b) whether this condition might have had an influence on the outcome and response to contrast dye injection.

Response:

Thanks for your suggestions. According to your suggestions, we add the relative discussion in second paragraph of the Discussion selection(page 12, line 218-231)

Comment #5: Page 7, line 114: correct "NST-ACS" -> "NSTE-ACS".

Response:

Thanks for your suggestions. According to your suggestion, we correct "NST-ACS" -> "NSTE-ACS"( Page 7, line 117).
Comment #6: Page 9, lines 171-172: "Patients with CIN were characterized by higher hydration volumes, higher hyperurycemia, and higher eGFR." have to be corrected in "lower eGFR" as seen in Table 1.

Response:

Thanks for your suggestions. According to your suggestion, we correct " higher eGFR " -&gt; " lower eGFR "( Page 10, line 181-182).

Comment #7: Page 13, line 241 "which may caused" correct in "which may cause"

Response:

Thanks for your suggestions. According to your suggestion, we correct " which may caused " -&gt; " which may cause "( Page 14, line258).

Comment #8: Page 13, lines 244-246. Rephrase the sentence "Third, we did…." because it is not clear.

Response:

Thanks for your suggestions. According to your suggestion, we Rephrase the sentence " Third, we did not discriminate between CHF as a pre-existing condition versus CHF as a new cause of acute myocardial infarction, which may have caused a confusing effect between acute and a history of CHF. " -&gt; " Finally, we did not discriminate between pre-existing CHF and new-onset CHF caused by acute myocardial infarction, which may have also been a confounder. " (Page 14, line260-262).

Comment #9: Figure 1 may be omitted.
Response:

Thanks for your suggestions. According to your suggestion, we omit the Figure1.Receiver operating characteristic curve and threshold for pre-procedural RRI in CIN prediction.