

Peer Review File

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Reviewer A:

Although this was a retrospective analysis, it would have been interesting to see how the serum cystatin C levels changed through the follow up period and assess the causal relationship with MACE development. However, the authors did acknowledge this as a limitation.

When doing the cox regression analysis, the authors could have further adjusted for age and sex, although the latter showed no significant difference between the groups there was a high percentage of males over females in the study and their effect cannot be ignored. While there was a significance difference in age between those that developed MACE and those that did not.

Reply: Related results have been added to Table 2 and the revised manuscript.

Changes in the text: Table 2 and lines 181-187 of the revised manuscript

Furthermore, although the authors excluded individuals with other metabolic diseases, they included those with diabetes mellitus, is there a specific reason for this?

Reply: Metabolic disease is defined as an impaired capacity to switch between different energy substrates and is a hallmark of insulin resistance and type 2 diabetes mellitus (T2DM) that is well known to the public as a major risk factor for cardiovascular morbidity and mortality. Besides, metabolic disease is a very broad concept, and many diseases such as obesity, cirrhosis, atherosclerosis, and osteoporosis are metabolic diseases, those diseases are closely associated with cardiovascular disease. Therefore, to increase the comparability of the study cohorts and to highlight the influence of single factors on MACE after PCI, we exclude metabolic diseases other than diabetes in this study.

Changes in the text: NO

Lastly, Is there a specific reason why the authors did not include data on BMI, waist and hip circumferences?

Reply: Indeed, the correlation between BMI, waist or hip circumferences, and the prognosis of cardiovascular disease has been reported successively. However, there is also controversy related to the concept of metabolically healthy obesity phenotype, the "obesity paradox," and the importance of fitness to protect individuals who are overweight or obese from cardiovascular diseases.

For the patients with AMI following PCI, some studies showed that overweight patients with stable CAD have a lower risk of MACE after PCI, especially recurrent myocardial infarction (PMID: 34355369, PMID: 31923172, PMID: 20630460), which indicates that increased BMI was associated with better nutritional status. On the other hand, obesity has been reported to be associated with increased rates of type 2 diabetes, hypertension, cardiovascular disease, sleep disorders, osteoarthritis, and premature death (PMID: 38015216).

In our study, the main reasons why we did not include data on the BMI, waist, and hip circumferences of the included population are as follows: (1) In our study, the population was 60-70 years old, and most of the elderly or their family members could not accurately provide information about their height, weight, waist, or hip circumferences at the time of hospitalization during the telephone follow-up, moreover, that information also did not appear in patient's case, which is an important reason for the lack of BMI. (2) Controversy based on obesity and prognosis of cardiovascular disease.

Changes in the text: NO

Reviewer B:

This study compares CAR and RIS for treating CCA in aortic dissection, showing CAR's edge in reducing neurological deficits. And the manuscript is well-structured, offering clear definitions and comprehensive follow-up results. To further enhance the quality of the manuscript and improve its impact, the following suggestions are provided for the authors' consideration.

1. Please indicate the study type, i.e. a retrospective cohort study, in the Abstract or Title.

Reply: Ok, I added this in the Abstract in line 57.

2. Title: Indicate in the title that the interventions are CAR and RIS. Also, specify "outcomes" as safety and prognosis.

Reply: according to your policy, the title of the paper is not permitted to major revise, so the interventions were indicated in the main text.

3. Abstract: The population studied was ATAAD patients complicated with CCA. However, presentation in the Abstract-Background lack the ATAAD information.

Reply: Ok, I added this in the Abstract in line 55.

4. Abstract-Methods

(1) Please include the main statistical methods;

Reply: Ok, I added this in the Abstract in line 61-63.

(2) Please indicate the primary outcomes of interest and any variables that were particularly focused on.

Reply: Ok, I added this in the Abstract in line 61-63.

(3) Please clarify duration of follow-up (median 40 month) and methods used for assessing outcomes.

Reply: Ok, I added this in the Abstract in line 71-72 and line 61-63.

5. Abstract-Results

(1) "The overall operative mortality was 7.4% and the incidence of postoperative neurological deficit was 31.5%." Please include the number of patients, not just percentages.

Reply: Ok, I added this in the Abstract in line 65-66

(2) "The rates of main postoperative complications were similar between the two groups." Please include specific data, not just qualitative descriptions.

Reply: Ok, I added this in the Abstract in line 75.

6. Introduction: Expand upon this section by introducing the two techniques compared in the study (extra-thoracic carotid artery replacement and in situ reconstruction), including their respective advantages and disadvantages.

Reply: I moved this description from the Methods section to the introduction section. The order of Figure is adjusted.

7. Methods: Although an explanation was provided to the reviewers stating, “Because there are disputes in the treatment, and there is no consensus in our center either, so the two methods were different operators’ choices, in terms of time, in the early stage in-situ reconstruction was the main choice, after gradually recognizing the disadvantages, some operators changed their strategy and became more active.” Please also clarify this in the methods.

Reply: Ok, I added this in the Method in line 139-144.

Because there are disputes in the treatment, and there is no consensus in our center either, in terms of time, in the early stage in-situ reconstruction was the main choice, after gradually recognizing the disadvantages, treatment options switched to a more active method. The two groups of patients were treated differently because of their chronological order.

Additionally, elucidate the basis for choosing between these two techniques (different considerations of various operators), as readers may be curious about the criteria used to select between these two approaches and this may indicate potential selection bias.

Reply: According to my latest description, the two groups of patients were treated differently because of their chronological order.

8. Methods: Please describe the follow-up period’s length, frequency of regular visits to the outpatient clinic and the intervals at which CTA was performed during follow-up.

Reply: Due to the actual situation in China, the review of these patients was irregular. CTA interval was irregular, too.

9. Methods: “A value of $P < 0.05$ was considered significant.” Please state whether P-value is one-sided or two-sided test.

Reply: Ok, I added this in the Methods in line 221

10. Results: There is a discrepancy between the text, which states that “6 (6.0%) patients had prior stroke”, and Table 1, which indicates that 4 (5.9%) patients had a prior stroke. Please verify the accuracy of this data.

Reply: Ok, I corrected this in the Results in line 270

11. Results: The SDs for “Duration from onset to operation” (Table 1) and “MV time” (Table 3) are greater than their means. It typically indicates that the data is highly dispersed or has a skewed distribution and would be more appropriate to use the median with IQR.

Reply: I rechecked it. It's a normal distribution

12. Please provide the flow diagram of inclusion and exclusion with reasons.

Reply: I added the flow-chart as figure 2

13. Table 1, 3: Replace $P=1$ with $P > 0.99$ throughout the manuscript.

Reply: I didn't find $P=1$ throughout the manuscript.

14. As mentioned, there is potential selection bias or bias related to the implementation of technique. Please also add qualified years of doctors in both groups, in tables 1, 2 and figure 3.

Reply: according to my latest description, the two groups of patients were treated differently because of their chronological order, not because of the doctors' choice.

15. Please delete "continuous" in Figure 3. Additionally, the authors need to provide the rationale of variables inclusion. As we known, we usually conduct univariate analysis and then multivariate one.

Reply: ok. Based on previous research and clinical experience, factors that may affect neurologic deficit were included in multivariate analysis. I added this in the Methods in line 218-219. I modified the figure, it became figure 4 in new order.