

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Association of coronary dominance with the severity of coronary artery disease: a cross-sectional study in Shaanxi Province, China
AUTHORS	Yan, Bin; Yang, Jian; Fan, Yajuan; Zhao, Binbin; Ma, Qingyan; Yang, Li-Hong; Ma, Xian-Cang

VERSION 1 – REVIEW

REVIEWER	Pablo Motta Texas Children's Hospital, Baylor College of Medicine Houston, Texas - USA
REVIEW RETURNED	08-Feb-2018

GENERAL COMMENTS	<p>General Comments</p> <p>The authors present a prospective, multi-center cohort study reporting that right coronary dominance anatomy has significantly higher proportion of serious coronary stenosis than patient with left coronary dominance or co-dominance. Unfortunately no outcome data was obtained so the question "Is the coronary anatomy is related to outcome" has not been answered</p> <p>Particular Comments:</p> <p>Page 5, line 53</p> <p>The phynotype of coronary dominance was.....</p> <p>Should be the phenotype of coronary dominance was.....</p> <p>Page 6, line 43 ...mean±standard.</p> <p>Please leave a space between... mean ± standard.</p> <p>Page 9, line 35</p> <p>At present, the mechanisms between right dominance and severity of CAD was still not known</p> <p>Should be:</p> <p>At present, the mechanism between right dominance and severity of CAD was still not known</p>
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REVIEWER	Ibtesam El-Dosouky Zagazig University, Egypt
REVIEW RETURNED	04-Apr-2018

GENERAL COMMENTS

The concept of lesion severity detected by coronary angiography and its relation to system dominance as applied to CAD population is interesting. The goal of the paper is to identify if the dominant system is related to the severity of the lesion calculated by Gensini score.

previous studies search for dominance and its relation to lesion severity detected by CT angio,
but there are some major comments:

1- on page 4; line 21-31
the reference paper (ref;10) is not identical to your definition of dominance, and not to the % of their presentations.
re-define dominance and put the % of their presentation accurately.

2- page 4; line 40-43
authors said: our pilot data, what is the source of your data; are they from previous studiesput the reference,
or from this present study....if so, this is not the suitable site....move to discussion.

3- page 5; line 15
why patients with previous CAG were excluded from the study.
are there any exclusion criteria to add.

4-page 5; line 31
put the definition of hypertension and so of DM according to the last guidelines, and better to be hypertension is: or on medical treatment and so in DM.

5- page 6; line 26
the authors said: the importance of the segment was rated 5 for LM and....
please put the details to be clear to all readers, you jump from 5 to 0.5 ...
--- how did you calculate the total score, it must be elucidated?

6-page 6; line 45, statistical analysis.
you used chi- square, did you use ANOVA or what for the other variable analysis.

7- results:
Did you compare between RD,LD, and CD, in the different demographic data, I think it may add beneficial results?

8- page 8; discussion:
line 23 re-define dominance and put the reference.

9-page 9; line 36
the author said: At present, the mechanisms between right dominance and severity of CAD was still not known. Therefore, further research is needed to identify factors contributing to the inferior prognosis.....
it is better to say: therefore further researches are needed to detect the underlying mechanism for developing more severe lesions in the right dominance. and out this sentence as a recommendation, together with the sentence in the last line of conclusion... as it is a recommendation, not a conclusion.

10- and remove the sentence of..... to identify factors contributing to the inferior prognosis of patients with a left dominant coronary artery system.
as this has been discussed will in the previous studies.

Minor comments:
1-page 7 , line 23
who under CAG.....>>>> change to underwent
four group...four groups
and so all over the text try to correct the grammar and spelling mistakes.

	<p>2- any abbreviation must be defined on the first appearance as SBP, DBP, ...</p> <p>3-results 2nd paragraph, line 28, remove Age.....to the 4 groups. the sentence of - baseline characteristics- is sufficient.</p> <p>4- table 1</p> <p>1st grade, 2nd grade,.....put the abbreviation in the appendix to be clear to the reader what is the meaning,</p>
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VERSION 1 – AUTHOR RESPONSE

To reviewer 1:

Thank you very much for your comments and advices, which are very useful for improving our manuscript. We would like to reply the following questions as below:

1. Page 5, line 53 (The phynotype of coronary dominance was Should be: the phenotype of coronary dominance was). Page 6, line 43 (Please leave a space between mean \pm standard). Page 9, line 35 (At present, the mechanisms between right dominance and severity of CAD was still not known Should be: At present, the mechanism between right dominance and severity of CAD was still not known).

Reply: Thanks for the suggestion. We have revised our manuscript as shown in the manuscript attached with all changes tracked. We also invited our collaborators, Dr Lingfang Zeng, a British senior lecturer in King's College London to improve the writing of the manuscript.

To reviewer 2:

Thank you for your comments and opinions, which are greatly appreciated. We would like to reply the following questions:

1. on page 4; line21-31. The reference paper (ref;10) is not identical to your definition of dominance, and not to the % of their presentations. re-define dominance and put the % of their presentation accurately.

Reply: I am sorry for our mistakes. We have revised our manuscript as shown in the manuscript attached with all changes tracked.

2. page 4; line 40-43. Authors said: our pilot data, what is the source of your data; are they from previous studiesput the reference, or from this present study....if so, this is not the suitable site....move to discussion.

Reply: This is a good advice for us. We have revised our introduction according to your opinions to make it more rigorous.

3. page 5; line 15. why patients with previous CAG were excluded from the study. Are there any exclusion criteria to add?

Reply: Previous revascularization, such as PTCA, may affect the accuracy of Gensini score in this study. Moreover, our CAG database was established in 2015. We cannot obtain previous CAG or PCI medical records of patient. Therefore, we excluded patient with history of CAG and CABG.

4. page 5; line 31. Put the definition of hypertension and so of DM according to the last guidelines, and better to be hypertension is: ... or on medical treatment and so in DM.

Reply: Thank you for your great advises. Our research is a retrospective study. The definition of hypertension and diabetes used in our manuscript was diagnosed in the clinical work. We collected all the medical records from Hospital Information System of the First Affiliated Hospital of Xi'an Jiaotong University from 2015 to 2017. New guidelines of hypertension are promoted in our hospital recently. We will put the definition of hypertension based on the latest guideline in the next work. We hope to get your understanding.

5. page 6; line 26. the authors said: the importance of the segment was rated 5 for LM and....please put the details to be clear to all readers, you jump from 5 to 0.5 ... how did you calculate the total score, it must be elucidated?

Reply: Thanks for the suggestion. We have followed your opinion and added detail in the methods. The evaluation of each segment was performed as the scores multiplied by 5 for the left main trunk, 2.5 for the proximal LAD, 1.5 for the middle LAD, 1 for the distal LAD, 1 for the first diagonal branch (DIAG), 0.5 for the second DIAG, 2.5 for the proximal LCX, 1 for the distal LCX and posterior descending branch, and 0.5 for the posterior branch. While the right coronary artery was performed as the scores multiplied by 1 for the proximal, middle and distal RAD and posterior descending branch, and by 0.5 for the posterior branch. The final score was calculated by adding the scores of each segment.

6. page 6; line 45, statistical analysis. you used chi-square, did you use ANOVA or what for the other variable analysis.

Reply: Yes, we used analysis of variance (ANOVA) to compare continuous variable among the four subgroups of different grade of Gensini score in Table 1. We have revised our methods in the manuscript.

7. results: Did you compare between RD, LD, and CD, in the different demographic data, I think it may add beneficial results?

Reply: Thank you for reminding us to include the demographic data in Table 2, which has been modified. There was no statistical significance between RD group and LD+CD group in age, gender, SBP, DBP, heart rate, diabetes, hypertension, smoking status and hyperlipidemia.

8. page 8; discussion: line 23 re-define dominance and put the reference.

Reply: We have revised our manuscript as shown in the manuscript.

9. page 9; line 36. the author said: At present, the mechanisms between right dominance and severity of CAD was still not known. Therefore, further research is needed to identify factors contributing to the inferior prognosis...it is better to say: therefore, further researches are needed to detect the underlying mechanism for developing more severe lesions in the right dominance. and out this sentence as a recommendation, together with the sentence in the last line of conclusion... as it is a recommendation, not a conclusion.

Reply: This is a terrific advice for us. We have followed your opinion and revised our discussion.

10. and remove the sentence of.... to identify factors contributing to the inferior prognosis of patients with a left dominant coronary artery system. as this has been discussed will in the previous studies.

Reply: We have revised our manuscript as shown in the MS attached with all changes tracked.

11. page 7, line 23. who under CAG.... change to underwent. four group...four groups and so all over the text try to correct the grammar and spelling mistakes. Any abbreviation must be defined on the first appearance as SBP, DBP. Results 2nd paragraph, line 28, remove Age....to the 4 groups. The sentence of - baseline characteristics is sufficient. Table 1 1st grade, 2nd grade.... put the abbreviation in the appendix to be clear to the reader what is the meaning.

Reply: We have followed your opinion and revised our manuscript as shown in the MS.

VERSION 2 – REVIEW

REVIEWER	Ibtesam El-Dosouky Zagazig University, Egypt
REVIEW RETURNED	10-May-2018
GENERAL COMMENTS	well done but put subheading: recommendation and study limitations