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OPEN PEER REVIEW

Left Ventricular Strain in Patients with Hypertensive Heart Disease and Normal Ejection Fraction Assessed by Speckle Tracking Echocardiography

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About this report

This open peer review (OPR) report shows the public comments made on this article during peer review, by the reviewers, the associate editor and the editor-in-chief, for every revision round, together with the authors' replies. Comments appear only with the consent of the people who wrote them. Reviewers who chose to sign their report are named; the others are shown as "Referee". Comments are edited for language only, and confidential remarks to the editors are not included.

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1 Original submission

3 comments · 22 Oct 2022 – 28 Oct 2022

Referee 1 Reviewer

REJECT 22 Oct 2022

Hi
The article was reviewed.
GLS in hypertensive subjects with normal LVEF.
There are many articles about the usefulness of LV strain in the early detection of subclinical changes in hypertensive patients with normal EF, and I really don't understand why this study was done, despite the many strong articles with large samples.
And what new information does this study add to our knowledge?
With best regards

Associate Editor

MINOR REVISION 28 Oct 2022

Needs minor revision

Editor-in-Chief

MINOR REVISION 28 Oct 2022

Please make the revisions.

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Revision 1

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Dear editors and reviewers

Thanks for reaching out to us regarding the manuscript entiteled “Left ventricular strain in patient with hypertensive heart disease and normal EF assessed by speckle tracking echocardiograghy”. We belive that these comments have help us enhance the quality of the manuscript. We have also done our best to revise and improve the paper according to the comments. Herewith, we provided the authers’ responses to each comment right after each statement. Also, all the changes have been highlighted in the manuscript. Please feel free to contact us if you need further information.

Best regard, corresponding author

Reviewer 1:

1. What new information this study adds to our knowledge?

   Authors response: Thank you for noticing this point. There are many articles about LV strain in hypertensive patients , but because of importance of hypertension as a risk factor of heart failure , limited data about pattern of regional strain abnormality in Iranian people and impact of other factors such as sex and antihypertensive treatment that may be have a significant effect on the association between hypertension, and longitudinal and circumferential strain , we designed this study . in this study we showed the relatively globalal decrease in longitudinal and circumferential strain in hypertensive LV also gender may influence the response of LV deformation in hypertension therefore hypertensive men rather than hypertensive women are at further risk for heart failure.

Reviewer 2:

1. Definition of hypertension should be clearly mentioned also method of measurement

   Authors response: Thank you for noticing this point. Definition of hypertension and method of measurement explained

2. How did you confirm uncontrolled hypertension among patients and (how did you exclude possibility of whit coted HTN)

   Authors response: Thank you for noticing this point. In inclusion criteria ability of daily home BP monitoring was mentioned and at the beginning of study average of systolic and diastolic BP in 12 weeks ago (based on twice daily home blood pressure monitoring) was evaluated, BP≥140/90 labeled as uncontrolled HTN

3. In abstract said; LVGLS and LVGCS were lower in hypertensive, but only value of GLS was mentined

Authors response: Thank you for noticing this point. GCS added in abstract

4. Pleas add figures of your work

Authors response: Thank you for noticing this point. We are added figures of echo pictures

5. Which segment showed the least strain value? Did you find any specific form of regional dysfunction in hypertensive patient (as in other studies revealed)?

Authors response: Thank you for noticing this point. Regional longitudinal strain was significantly reduced relatively at all LV segments except apico anterolateral, apico anterior and apico inferoseptal compared to the controls. The LVCS parameters in different LV segments were found to be significantly lower among hypertensive cases compared to the controls.

Rewier3:

1. Add the type of study. Add the type of sampling method in case and control groups.

Authors response: Thank you for noticing this point. We are added the type of study and type of sampling method in case and control groups.

2. The reason for the design of case and control study is because the number of cases is less and therefore the number of controls is increased, Why the sample size is smaller in the control group? What was the frmula for calculating the sample size?

Authors response: Thank you for noticing this point. According to expert advise statistics and similar studies: minimum sample size that requested was 26 that calculated according to the formula is given below. Frequently In similar studies(number 23, 24 in refrence), cases are two or three times more than control group , and we designed these numberes of case and control with attention that the number in all groups to be compared is greater than minimum sample volume.

$$n=\frac{2\left(z_{1-\frac{\alpha}{2}}+z_{1-\beta}\right)^2\times s^2 p}{\left(\mu_1-\mu_2\right)^2}$$

μ_1: -18.29 μ_2: -23.73 SD_1: 6.53 SD_2: 5.78

N= 26 (in each group)

3. The reason is the presence of negative numbers in the result. Explain this calculation is?

   Authors response: Thank you for noticing this point. Myocardial strain calculatedas the change from the original muscle length to muscle length after myocardial contraction and presented as percentage. During systole, myocardial fiber shorten and strain value assessing fiber shortening has a negative value

4. The results should be based on the purpose and title of the study

   Authors response: Thank you for noticing this point. Revised the result based on purpuse

2 Revision 1

2 comments · 10 Dec 2022 – 10 Dec 2022

Associate Editor

ACCEPT 10 Dec 2022

accept

Editor-in-Chief

ACCEPT 10 Dec 2022

accept