Author’s response to reviews

Title: INTERATRIAL BLOCK AND ATRIAL REMODELING ASSESSED USING SPECKLE TRACKING ECHOCARDIOGRAPHY

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"INTERATRIAL BLOCK AND ATRIAL REMODELING ASSESSED USING SPECKLE TRACKING ECHOCARDIOGRAPHY"

Dear editor Dr. Ignatios Ikonomidis:

First of all, we would like to thank you for your comments and those from the reviewers Dr. Umberto Barbero, Dr. Spiridon Katsanos and Dr. George Makavo. We hope to achieve the relevant changes in our manuscript according to your suggestions and wishes, we are convinced that this will result in an improvement in the quality of this.
Reviewer comments

Reviewer 1: Umberto Barbero

Commentary: Lacalzada-Almeida et al performed an interesting study on the role of strain echocardiography in patients with interatrial block. Due to the spreading of ablation procedure for supraventricular arrhythmias and to the need to ever better understand the physiological mechanism underlying them, I think that this paper could be of interest for the journal readers after some minor changes. On the whole, it is a very nice job. In the first part of the paper, where the authors talk about atrial anatomy and the role of Bachmann bundle, a reference should be added regarding atrial anatomy (see for example: Anatomy of the atria : A road map to the left atrial appendage. Herzschrittmacherther Elektrophysiol. 2017 Dec; 28(4):347-354).

Response: Thank you very much for your comments Dr. Barbero. We have proceeded to include the indicated bibliographic reference in the Background section, line 2, page 5.

Commentary: The role of atrial volume as a risk factor for atrial arrhythmias has been evaluated and demonstrated using CMR in patients who can act like clear examples because of their extreme dilated atria like the patients with Ebstein anomaly (see Rydman R et al. Major adverse events and atrial tachycardia in Ebstein's anomaly predicted by cardiovascular magnetic resonance. Heart. 2018 Jan; 104(1):37-44.) Since the authors talk about the CMR role in predicting atrial arrhythmias, recent and high IF citation like the one I mention above should be added in the references section. Page 14 line 18, maybe delayed gadolinium enhancement is not so clear, better use the LGE (late gadolinium enhancement) form.

Response: We have proceeded to include the indicated bibliographic reference, which we consider of great interest for our article. We have also changed the indicated acronym by the most appropriate LGE (late gadolinium enhancement) in the Discussion section, page 14, lines 8, 13 and 16. Also in the Limitations section, page 15, line 13 and finally, in the List of Abbreviations section, page 16, line 17.

Reviewer 2: Spiridon Katsanos

The authors have presented a novel study correlating interatrial block (IAB) on surface ECG with LA speckle tracking echocardiography. Strain rate during atria booster pump function (SRa) and reservoir period (SRs) and maximal peak LA longitudinal strain in the reservoir phase were associated with P wave duration on ECG after adjustment of other major confounding variables including age hypertension and diabetes. The study provides some pathophysiological insights in LA dysfunction.

Commentary: The lack of prospective follow up to give clinically relevant prognosis of the combined included factors is a major limitation acknowledged by the authors. In this view, the SRa cut-off related with the presence of IAB is of no clinical interest and should not be included in the abstract.
Response: We have proceeded to remove lines 18, 19 and 20 from the abstract section, page 3.

Commentary: The study included prospectively patients according to IAB on surface ECG and no AF history, however it does not provide information about the recruitment of patients (outpatient clinic, inhospital patients, healthy volunteers eg). Also were they consecutive patients?

Response: In order to answer your question we have modified the following sentence: “We performed a single-cross-sectional study, with prospective and consecutive recruitment. The study included outpatients clinic, aged > 60 years, undergoing ECG at our center prospectively between January and May 2016, during the preoperative general surgery assessment”, Methods section, page 15, line 15.

Commentary: The authors have made an extensive statistical analysis to support their conclusions. However, since in general such a sample is not difficult to obtain in everyday clinical practice, the number of included patients is surprisingly low.

Response: In effect, that's right, but the recruitment stopped, given that statistical significance was achieved with the indicated sample. However, we took into account his comment and for a second study to be carried out, where we intend to know the incremental value that speckle tracking echocardiography of the left atrium may have on the ECG, in the prediction of atrial fibrillation in patients with block interatrial (IAB), we would increase the size of the n.

Commentary: Please rephrase in the abstract section «after adjusting…., respectively» (clarify dependent/independent variables)

Response: It is now expressly indicated that the dependent variables analyzed are in the linear regression the duration of the P wave in the ECG and in the multinomial logistic regression analysis the variable presence of IAB, taking three values ("pIAB," "aIAB," and "Patients with no IAB"). The independent variables were the echocardiographic measures of LA size and function, adjusting for confounders, Abstract section, page 3, lines 11 to 15

Commentary: Page 5 line 48 «tracking» is «is tracking»

Response: Yes, thank you very much, we have corrected it.

Commentary: Please improve table legends. They should be self-explanatory. Eg: Figure 3 define the dependant variable, Figure 1, 2, 4: explain the comparisons.

Response: Explanatory text has been included in both the legends of tables and figures.

Reviewer 3: George Makavos

Commentary: Interesting and innovative work on a specific and demanding topic combining atrial electrical and structural alterations by means of speckle tracking echocardiography.
Response: We would like to thank Dr. Makavos for his comments.

With all my considerations,

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