Author’s response to reviews

**Title:** Clinical Value of Myocardial Performance Index in Patients with Isolated Diastolic Dysfunction

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**Version:** 1  **Date:** 14 Jun 2019

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Eui-Young Choi, MD, PhD (Reviewer 1)

This study tried to evaluate usefulness of conventional PW Doppler derived-myocardial performance index (MPI) and TDI-derived MPI for detecting isolated diastolic dysfunction. According to the study results, the predictive power of both PW-MPI and TDI-MPI were modest and their correlations were modest at most. There are some questions to be answered.

First, the study purpose was not clear. Diastolic function used as gold standard in this study can be easily measured by conventional mitral inflow Doppler and tissue Doppler velocity, but why do we need complex measurement of MPI for detecting diastolic dysfunction.

R. Dear Choi Eui-Young, thank you for the comments, as an answer to your first question this study did not intend to evaluate the utility of MPI for detecting diastolic dysfunction that as you have already written, is easily detected by mitral inflow Doppler and tissue Doppler velocity. Our objective, as described in the introduction, was to evaluate an issue rarely reported in the literature which is the diagnostic accuracy of PW-MPI and TDI-MPI in hypertensive patients.
with diastolic dysfunction and a normal ejection fraction, since these indices are considered by several authors as markers of combined LV systolic and diastolic functions.

Secondly, previous several studies already showed that PW-MPI and TDI-MPI were poorly correlated. In this point of view, what is the additional information in this study results?

R. In fact as reported in the discussion of the study, the correlation between PWD-MPI and TDI-MPI changes between authors and the population studied; Gaibazzi N et al, Rojo EC et al and Duzenli MA et al, found mild to moderate agreement between these indices unlike Alsafi Z et al, Vow WC et al. In our case, the intention was to observe the grade of agreement of these parameters in patients with isolated left ventricular diastolic dysfunction, an issue not reported in the literature.

Anca Irina Corciu, M.D., Ph.D.  Reviewer 2

In the present study Gonçalves Fernandes et al address a challenging issue of the clinical value of myocardial performance index in patients with isolated diastolic dysfunction.

The paper is quite well written, the results are interesting and the study limitations are well described.

There are some remarks I would like to make: - a careful revision of the entire manuscript should be done for the identification of discrepancies (for example, ECG and EKG they are both used as an abbreviation of electrocardiogram; TDI-MPI cut-off value is >0.42 or > 0.43…)

R. Dear Corciu Irina, thank you for the comments and suggestions. According to your suggestion, we did a careful review of the manuscript and corrected the observed discrepancies.

The incidence of cardiovascular risk factors (smoking history, diabetes…) should be added in Table I -

R. As recommended, we included in table I the cardiovascular risk factors
The authors report left atrium diameter; the indexed left atrium volume would be more appropriate.

R. The initial protocol did not contemplate left atrial volume, we recognize that it would be more appropriate, but considering that this study involved asymptomatic hypertensive patients with a diagnosis of mild diastolic dysfunction, it is unlikely that this index would show relevant additional information.

ACE/ARA should be replaced by ACE-Ingibitors/ARB

R. This information was added in table I.

The value of NT pro BNP biomarker should be added if available

R. The initial protocol did not include the dosage of biomarkers

In the text the authors used "a1", "b1" for TDI-MPI, but in the figure 1 they are illustrated as a,b…That should be corrected.

R. As suggested, we corrected Figure I

The final conclusion should be rewritten, it is not very clear.

R. As suggested, we rewrote the final conclusion

Editorial Comments:

Please use an update definition of diastolic dysfunction.

R. Dear editors, thank you for the comments and suggestions. We updated the diastolic dysfunction criteria based on the 2009 ASE / EAE guidelines with no impairment in the results. We prefer to use the recommendations of the 2009 ASE / EAE guidelines because these criteria have already been tested in numerous studies and have proven to be an important predictor of all-cause mortality in a large epidemiologic study.