Reviewer’s report

Title: Area of the pressure-strain loop during ejection as non-invasive index of left ventricular performance: a population study

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Reviewer: Elif Sade

Reviewer's report:

In the paper entitled "Area of the pressure-strain loop during ejection as non-invasive index of left ventricular performance: a population study" the authors investigated the anthropometric and clinical determinants of ejection work density (EDW) and also explored the relationship of EWD with indexes reflecting LV structure, LV diastolic function and arterial stiffness in a fair number of patients derived from the FLEMENGHO study. It is important that the authors performed pressure waveforms analysis instead of taking the systolic pressure as adopted in the myocardial work analysis.

Some issues need to be clarified:

Which were the baseline illnesses? Treated HT is does not define the subgroup well enough: Is the hypertension controlled or not. This raise curiosity because EDW values overlaps completely between the adjusted treated and untreated groups.

The authors assessed multivariable-adjusted associations of EWD with anthropometric and clinical characteristics, hemodynamics, arterial stiffness and echocardiographic indexes of LA volume index (LAVi) and LV structure and function by using mixed models. All models were adjusted for age, sex, heart rate and body height and weight, and accounted for family clusters modelled as a random effect

However the corresponding table are not self-explanatory and may be confusing for the reader. I would expect an influence of heart rate which is also higher in women, as reader for example.

There might be a confounding effect of ACE/ARB use as well as smoking. Are the authors concerned about?

Is it possible to think that one should be cautious when using EDW in women but more confident in men because of associations of ejection work density with echocardiographic indices of left atrial and left ventricular geometry?
Level of interest
Please indicate how interesting you found the manuscript:

An article of importance in its field

Quality of written English
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