

CORRESPONDENCE

Response to Ayubi *et al.*: ‘Left atrial dimension is related to blood pressure variability in newly diagnosed untreated hypertensive patients: methodological and statistical issues’

Hypertension Research (2017) 40, 300; doi:10.1038/hr.2016.136; published online 13 October 2016

Ayubi and Sani^{1,2} argue in their comments on our paper that the difference between the regression coefficients 0.018 and 0.022 for linked blood pressure (BP) variability with left atrial dimension and indexed left ventricular mass, respectively, are negligible. However, our data were misunderstood; 0.018 and 0.022 are β -coefficients for the association between the mean 24 h systolic and diastolic BP variability with the left atrial dimension (see Table 3). In the same table of regression β -coefficients, the left ventricular mass with BP variability is, in fact, 0.798 for systolic and 0.543 for diastolic mean BP variability, neither of which are statistically significant. In other words, according to our data, in newly diagnosed drug-naïve patients, each 2% increase in BP variability is associated with a 1 mm m⁻¹ increase in the indexed left atrium dimension, after adjusting for confounders; there is no significant association between BP variability and left ventricular mass. We agree that in this case, similar to other studies and clearly stated in the paper, the clinical significance remains to be fully proven. However, this novel finding continues to be evident even after a robust

statistical analysis. Moreover, incidentally, these results confirm previous data denying any significant relationship between the left ventricular mass and BP variability in the newly diagnosed, untreated hypertensive patients.³

With regard to the multiple regression analysis, we measured the independent relationship between the left atrium dimension and BP variability after adjusting for a panel of expected confounding variables (in this case, heart rate, gender, age, weight, diastolic function and eGFR). This is a common statistical procedure, and possible confounding covariates must be chosen prior to the analysis. A stepwise model, used to obtain a forward hierarchy of all variables added into the model one by one, was not necessary or required in this case because the only purpose was to yield evidence regarding the existence of an independent association between the left atrium dimension and BP variability.

Regardless, even after stepwise selection, BP variability remained significantly and independently associated with the left atrial

dimension when body mass index and age were included in the model ($P=0.015$).

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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- 2 Cipollini F, Arcangeli E, Seghieri G. Left atrial dimension is related to blood pressure variability in newly diagnosed untreated hypertensive patients. *Hypertens Res* 2016; **39**: 583–587.
- 3 Tatasciore A, Zimarino M, Tommasi R, Renda G, Schillaci G, Parati G, De Caterina R. Increased short-term blood pressure variability is associated with early left ventricular systolic dysfunction in newly diagnosed untreated hypertensive patients. *J Hypertens* 2013; **31**: 1653–1661.