



# Prognostic implication of systemic arterial pulsatility index in patients with heart failure

Kousuke Akao<sup>1</sup> · Teruhiko Imamura<sup>1</sup>

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To editor

Mazimba and colleagues demonstrated that a lower systemic arterial pulsatility index (SAPi), which is calculated as pulse pressure to pulmonary artery wedge pressure (PAWP) ratio, was associated with the incremental incidence of adverse clinical outcomes in patients with heart failure [1]. Several concerns should improve their findings.

Etiologies of heart failure, including ischemic, hypertensive, and valvular diseases, might have a considerable impact on SAPi, whereas no data are displayed in their study [1]. For example, aortic regurgitation is associated with wide pulse pressure. Laboratory and comorbidity data are also missing. A multivariable incorporating these potential confounders on clinical outcomes would increase the statistical robustness of their primary finding: the prognostic impact of SAPi.

One of the limitations of SAPi is the requirement of invasive right heart catheterization to measure pulmonary artery wedge pressure [1]. Our team recently demonstrated a moderate correlation between remote dielectric sensing, non-invasive electromagnetic-based technology to quantify lung fluid amount, and invasively measured PAWP [2]. Do the authors know any alternative non-invasive technology to PAWP?

The next concern would be the change in SAPi during therapeutic interventions. For example, improvement in congestion by diuretics therapy might decrease PAWP and paradoxically increase pulse pressure according to the concept of Frank-Starlin's law. Heart rate modulation therapy using ivabradine might maximize cardiac output and increase pulse pressure [3].

## References

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✉ Teruhiko Imamura  
teimamu@med.u-toyama.ac.jp

<sup>1</sup> Second Department of Internal Medicine, University of Toyama, 2630 Sugitani, Toyama 930-0194, Japan