



Editor's choice to the January 2023 issue

Angiography-derived index of microvascular resistance in Takotsubo syndrome

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Dear reader,

First of all, let me wish you all the best, success and a good health in this New Year 2023. We very much thank you for all your contributions over the past year and hope that you will continue to submit manuscripts to our journal and read our red journal. The journal is in very good shape and we enjoy the global readership that we have been able to establish over the years with this multi-modality imaging journal. The new SNAPP editorial management system is getting better and better, and will facilitate the growth that we foresee.

In this January issue, I would like to highlight the paper by Dr G. Castaldi et al. under the supervision of Dr F. Ribichini from the Division of Cardiology at the University of Verona in Italy [1]. Reason for choosing this publication is that over the past few years, there has been increasing interest in developing non-invasive approaches for the assessment of coronary microvascular dysfunction (CMD), which may be present in approximately 60% of patients with chest pain, and which otherwise would require an extensive invasive cardiac catheterization procedure with pressure wire and thermodilution technique.

The goal of this work by the team from Verona was to assess the extend of coronary microvascular dysfunction, as derived by modern angio-based solutions in patients with Takotsubo syndrome (TTS) and the relationship with clinical presentations. This was a retrospective study including a total of 41 consecutive patients. They used the Medis QFR® solution to determine the distal coronary pressure and 3 different formulas to calculate the angio-based CMD (Note). CMD was defined as an IMRangio value ≥ 25 units.

I refer to the actual manuscript for all the details, but the main findings of this research as described by the authors under the Discussion paragraph are the following:

- Coronary microvascular resistance assessed using angiography-derived IMR was significantly augmented in patients presenting with TTS;
- Angiography-derived IMR computed in the LAD territory was inversely correlated with left ventricular systolic function;
- The three formulas showed superimposable performance in assessing angiography-derived IMR.

You, the reader, will see more and more clinical research papers on CMD in the various journals over time, as this is a very important area of research, that should simplify and make more broadly available the diagnosis and treatment options for patients with coronary microvascular resistance.

With this, I would like to wish you much reading pleasure with this paper and all the other ones published in this January issue of the International Journal of Cardiovascular Imaging, and of course all upcoming 2023 issues.

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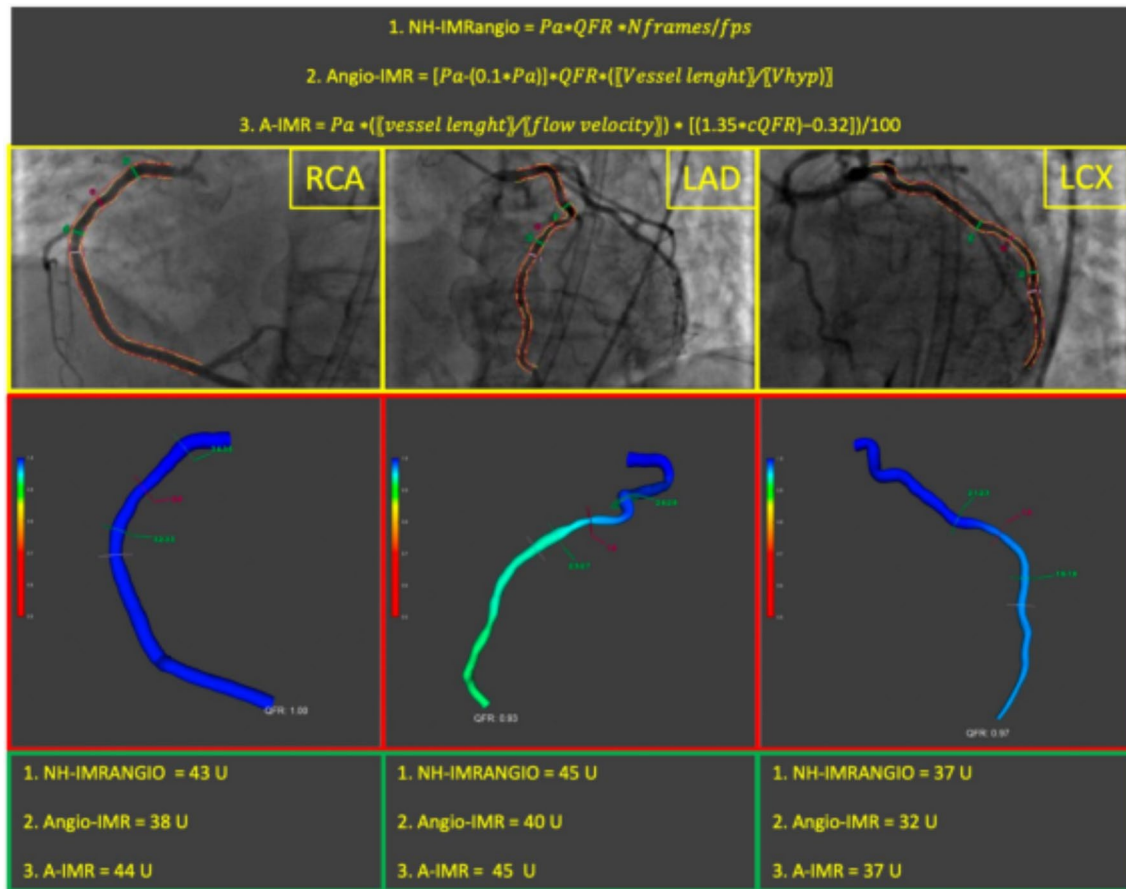


Fig. 1 Step-by-step angiography-derived IMR computation from QFR. Firstly, 2D-QCA analysis of target vessel is performed; secondly, 3D-QCA model simulation is automatically derived and vessel QFR is computed by the software. Finally, IMR according to the respective

formulas is calculated, cQFR: contrast-QFR; fps: frame per second; IMR: index of microvascular resistance; LAD: left anterior descending; LCX: left circumflex; N: number; Pa: arterial pressure; QFR: quantitative flow ratio; RCA: right coronary artery

Potential conflict of interest JHC Reiber is the CSO of Medis, but was in no way involved in this research and publication.

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1. Castaldi G, Fezzi S, Widmann M et al (2022) Angiography-derived index of microvascular resistance in takotsubo

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