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### Correspondence

# Microvascular dysfunction in silent myocardial ischemia



1ark **Re** 

Dear Editor,

We read with great interest with the manuscript regarding the management standards for stable coronary artery disease in India. Most recommendations in this guideline are made based on the latest findings from randomized trials or well-designed observational studies. Despite the guideline is very practical for the cardiologists to deal with their patients in clinics, we have a few minor suggestions for the guideline.

First, the Figure 2 legends describe the management flow diagrams of special type of angina including silent ischemia in 2A. However, it is somewhat a discrepancy between the term of angina and silent ischemia as the description of silent ischemia shown in the top box of 2A is "no angina symptoms" at the beginning. Second, silent ischemia, prevalently in the elderly and those with type 2 diabetes, is related to chronic total or partial obstruction of epicardial coronary arteries or microvascular "disease" in which we prefer the term of disease rather than "angina". We acknowledge that to diagnose myocardial microvascular disease requires to exclude some coexisted conditions such as severe aortic stenosis or advanced chronic obstructive pulmonary disease,<sup>2,3</sup> which are related to low cardiac output or systemic hypoxemia rather than obstructive coronary artery disease in the stress testing. In our opinion, the situations which should be excluded before the diagnosis of microvascular disease had better to be embedded in the flow diagrams.

### Conflicts of interest

The authors have none to declare.

### References

- Mishra S, Ray S, Dalal JJ, et al. Management standards for stable coronary artery disease in India. *Indian Heart J.* 2016;68(suppl 3):S31–S4910.1016/j. ihi.2016.11.320.
- Lumley M, Williams R, Asrress KN, et al. Coronary physiology during exercise and vasodilation in the healthy heart and in severe aortic stenosis. J Am Coll Cardiol. 2016;68(August):688–69710.1016/j.jacc.2016.05.071.
- 3. Patel AR, Kowlessar BS, Donaldson GC, et al. Cardiovascular risk, myocardial injury, and exacerbations of chronic obstructive pulmonary disease. *Am J Respir Crit Care Med.* 2013:188:1091–109910.1164/rccm.201306-1170

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