Caffeine intake and myocardial perfusion imaging

We read with great interest the opposing position taken by Dr. Reyes¹ to our view² on the issue of caffeine intake and vasodilator myocardial perfusion imaging (MPI) and the excellent editorial by Dr. Christian.³ While we feel that this debate highlights the controversy on this practical issue that is frequently encountered in the stress laboratory, several common threads emerge from these three articles that can help us move forward: (1) caffeine is an adenosine receptor antagonist. It is therefore possible that caffeine intake may alter the sensitivity of vasodilator MPI in some patients. We therefore tend to agree with the view that patients have to be warned about this interaction and instructed to abstain from caffeine intake for 12 h before their scheduled stress test. Further studies may shed light on identifying a subset of patients in whom caffeine intake may have greater influence on vasodilator-induced coronary hyperemia. (2) Moderate caffeine intake does not decrease coronary flow reserve to the extent needed to result in changes in myocardial perfusion by SPECT-MPI in the majority of patients. (3) There is insufficient and inconsistent evidence regarding the effect of caffeine ingestion on vasodilator MPI. (4) There is strong evidence that normal MPI is associated with excellent prognosis. It is therefore more likely that a strict restriction on the performance of MPI after moderate caffeine intake will result in an inconvenience to the patient rather than an improvement in diagnostic/prognostic yield of the test.

In our view, the evidence is not robust to support the recommendation that any caffeine intake in the previous

12 h should be considered as a contraindication for performing vasodilator MPI. Measuring caffeine blood levels in every patient is impractical and unlikely to provide useful information to guide whether to perform or cancel the stress test (Table 1 in²).

Rayan Saab, MD (✉)^a

Navkaranbir S. Bajaj, MD^{a,b}

Fadi G. Hage, MD, FASH, FACC, FASN^{a,b}

^aDivision of Cardiovascular Disease,
Department of Medicine, University of
Alabama at Birmingham, Lyons Harrison
Research Building 306, 1720 2nd AVE S,
Birmingham, AL 35294-0007
rsaab@uabmc.edu

^bSection of Cardiology,
Birmingham Veterans Affairs Medical Center,
Birmingham, AL

References

1. Reyes E. Caffeine reduces the sensitivity of vasodilator MPI for the detection of myocardial ischaemia: Pro. *J Nucl Cardiol* 2016, in press.
2. Saab R, Bajaj NS, Hage FG. Caffeine does not significantly reduce the sensitivity of vasodilator stress myocardial perfusion imaging. *J Nucl Cardiol* 2015. doi:10.1007/s12350-015-0364-4.
3. Christian T. The judgement of the eye. *J Nucl Cardiol* 2016, in press.

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