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# The Role of Quantitative Stress Perfusion CMR in the Management of Myocardial Ischemia

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Stress myocardial perfusion cardiac magnetic resonance (CMR) offers superior spatial resolution compared to nuclear medicine and enables accurate diagnosis of subendocardial ischemia without radiation exposure. Visual assessment of myocardial perfusion MRI has demonstrated excellent accuracy in diagnosing coronary artery disease (CAD) and is widely recognized as a pivotal tool in the evaluation of myocardial ischemia. Quantitative myocardial perfusion CMR (QP-CMR), in contrast, provides precise measurements of myocardial blood flow (MBF) and myocardial perfusion reserve (MPR) derived from the series of dynamic CMR perfusion images. Recent advancements in the sequence and post-processing technique have enabled the generation of pixel-by-pixel quantitative MBF maps, which can now be fully automated. This development represents a significant shift from visual to quantitative assessment in stress myocardial perfusion CMR. As a user-independent modality, QP-CMR has the potential to facilitate broader adoption in clinical practice.

This technique is at least as accurate as expert readers for the detection of significant CAD and provides superior accuracy in estimating the total ischemic burden in CAD patients. Furthermore, quantitative myocardial perfusion analysis provides unique insights into the pathophysiology of myocardial ischemia, including coronary microvascular dysfunction (CMD) in the patients with ischemia with nonobstructive coronary arteries (INOCA). This symposium will explore the clinical utility of QP-CMR in the management of myocardial ischemia.

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