**PET/CT-DETERMINED PERFUSION AND CORONARY FLOW IN CLINICAL ROUTINE**

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Positron emission tomography/computed tomography (PET/CT)-determined myocardial perfusion combined with myocardial blood flow (MBF) quantification in ml/g/min has evolved from research application to clinical application in the identification and characterization of multivessel coronary artery disease (CAD) process. Adding the assessment of hyperemic MBF increase during pharmacologic vasodilation and at rest with the resulting myocardial flow reserve (MFR = MBF during stress/MBF at rest) extends the scope of conventional myocardial perfusion imaging not only to the detection of the most advanced and culprit CAD, as signified by the stress-related regional myocardial perfusion deficit, but also to the less severe or intermediate stenosis in patients with multivessel CAD. Due to the non-specific nature of the hyperemic MBF and MFR, however, the interpretation of hyperemic flow increases with PET/CT demands an appropriate interpretation in the context with microvascular function, wall motion analysis, and eventually underlying coronary morphology in CAD patients. Such diagnostic approach with cardiac PET/CT perfusion or flow measurements may emerge as pivotal tool to individualize and guide the decision-making process for coronary revascularization procedures in CAD patients in the near future that remains to be tested clinically.