学 位 論 文 の 要 旨

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主論文の題名

Diagnostic Accuracy of Endocardial-to-Epicardial Myocardial Blood Flow Ratio for the Detection of Significant Coronary Artery Disease With Dynamic Myocardial Perfusion Dual-Source Computed Tomography

主論文の要旨

Stress dynamic CT perfusion (CTP) with absolute quantification of myocardial blood flow (MBF) is a new noninvasive technique for the assessment of myocardial ischemia. Previous dynamic CTP studies used absolute MBF in mL/100 g/min as a threshold to discriminate flow-limiting coronary artery disease (CAD), but absolute MBF can be vary because of multiple factors. The aim of this study was to compare the diagnostic performance of absolute MBF and the transmural perfusion ratio (TPR) for the detection of flow-limiting CAD, and to clarify the influence of myocardial scar detected by CT delayed enhancement (CTDE) on the diagnostic performance of CTP.

Fifty-one patients underwent dual-source CTP and invasive coronary angiography were retrospectively enrolled. TPR was defined as the endocardial MBF of a specific segment divided by the mean of the epicardial MBF of all segments. The area under the receiver-operating characteristics curve (AUC) of TPR was significantly greater than that of MBF for the detection of flow-limiting CAD (0.833 vs. 0.711, P=0.0273). When only territories containing CTDE were considered, the AUC of TPR decreased to 0.733. In conclusions, TPR calculated from absolute MBF demonstrated higher diagnostic performance for the discrimination of flow-limiting CAD when compared with absolute MBF itself.