MOTION-FROZEN MYOCARDIAL PERFUSION SPECT IMPROVES DETECTION OF CORONARY ARTERY DISEASE IN PATIENTS WITH NORMAL LEFT VENTRICULAR EJECTION FRACTION

Poster Contributions
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Authors: Yasuyuki Suzuki, Shunichi Yoda, Naoya Matsumoto, Ken Nagao, Nihon University, Tokyo, Japan

Background: Motion-frozen (MF) image reconstruction by QGS software was previously reported on the improvement of image quality in comparison to standard filtered back-projection (FBP). Diagnostic performance of MF reconstruction for the detection of coronary artery disease (CAD) in patients with normal ejection fraction (EF) and impaired EF has not been reported.

Methods: We compared diagnostic performance of MF reconstruction between normal EF (≥50%, n=105) and impaired EF (<50%, n=51) groups. We calculated stress-induced ischemia using total perfusion deficit (TPD) for both FBP and MF reconstruction datasets. ROC analyses were performed in FBP-TPD and MF-TPD groups with regard to significant coronary stenosis (≥75% stenosis) in both normal EF and impaired EF groups.

Results: The area under the ROC curve (AUC) of MF-TPD for the detection of CAD was significantly better than FBP-TPD in normal EF group (0.857 vs 0.804 for MF-TPD and FBP-TPD, respectively). However, the AUC of MF-TPD and FBP-TPD in impaired EF group was not significantly different (0.806 vs 0.755 for MF-TPD and FBP-TPD, respectively).

Conclusions: Motion-frozen myocardial perfusion SPECT improves detection of CAD in patients with normal left ventricular function, but did not improve it in patients with impaired EF group.