## **Summery**

## Clinical Usefulness of <sup>201</sup>Tl/<sup>99m</sup>Tc-PYP Dual Myocardial Quantitative Gated SPECT Program Using Low-Dose Dobutamine Loading in Assessment of Myocardial Viability in Patient with Acute Myocardial Infarction —A Case Report—

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An 86-year-old man with chest pain was admitted to our hospital. Coronary angiography revealed 99% stenosis of the mid segment of the left anterior descending coronary artery, therefore, a coronary stent was implanted. Immediately after the stent implantation, 99% stenosis occurred at the proximal site of the 1st diagonal artery because of stent jeal. On the 4th hospital day, ECG-gated <sup>201</sup>Tl/<sup>99m</sup>Tc-PYP dual myocardial quantitative gated SPECT was performed at rest and during low-dose dobutamine loading. The <sup>201</sup>Tl scintigraphy revealed moderately reduced uptake in the anterior, septal and apical walls, and 99mTc-PYP uptake was observed in the mid-anterior wall. A three-dimensional surface display of gated <sup>201</sup>Tl SPECT images showed severe hypokinesis in the anterior, septal and apical walls at rest. On the other hand, during low-dose dobutamine loading, improved wall motion was observed in the basal anterior and septal walls, while no change was observed in the midanterior and apical wall movements. Three-dimensional surface display of gated <sup>201</sup>Tl/<sup>99m</sup>Tc-PYP dual SPECT images revealed similar patterns of wall motion as those of gated <sup>201</sup>Tl SPECT images at rest. During low-dose dobutamine loading, on the other hand, a three-dimensional surface display of gated <sup>201</sup>Tl/<sup>99m</sup>Tc-PYP dual SPECT images revealed improved wall motion in the basal anterior, septal and apical walls, but worsened wall motion of the mid-anterior wall.

After 6 months, a follow-up coronary angiography revealed no re-stenosis of the stent, but 99% stenosis at the proximal aspect of the 1st diagonal artery. Left ventriculography revealed improved wall motion in the apex and akinesis of the mid-anterior wall. These wall motion findings were similar to those visualized in the three-dimensional surface display of gated <sup>201</sup>Tl/<sup>99m</sup>Tc-PYP dual SPECT images during low-dose dobutamine loading in the acute phase.

These results suggest that <sup>201</sup>Tl/<sup>99m</sup>Tc-PYP dual myocardial quantitative gated SPECT using low-dose dobutamine loading could be useful for the assessment of myocardial viability after reperfusion therapy in patients with acute myocardial infarction.

**Key words:** <sup>201</sup>Tl, <sup>99m</sup>Tc-PYP, QGS program, Acute myocardial infarction.