

## Summary

### Assessment of Left Ventricular Function by $^{201}\text{Tl}$ ECG-gated Myocardial SPECT

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We applied the QGS program for LV function analysis (described by Germano, 1995) to a  $^{201}\text{Tl}$  SPECT study at rest, and estimated its accuracy. We performed  $^{201}\text{Tl}$  ECG-gated myocardial SPECT in 25 patients with ischemic heart disease under an acquisition time used in the routine  $^{99\text{m}}\text{Tc}$  ECG-gated SPECT study. The quality of the gated images was visually assessed with a 4-point grading system. LVEDV, LVESV, LVEF determined by the QGS program were compared with those by Simpson's method on biplane LVG in 25 patients. Regional wall motion scores in 7 myocardial segments were assessed on the three-dimensional display created by the QGS program and the cine display of biplane LVG with a 5-point grading

system. Wall motion scores obtained by the QGS program were compared with those by LVG. Although 72.0% of  $^{201}\text{Tl}$  ECG-gated SPECT images were fair or poor in image quality, there were good correlations between the values obtained by the QGS program and LVG (LVEDV:  $r = 0.82$ , LVESV:  $r = 0.88$ , LVEF:  $r = 0.89$ ). In addition, wall motion scores by the QGS program were correspondent to those by LVG in 77.1% of all 175 myocardial segments. We conclude that the QGS program provides high accuracy in evaluating left ventricular function even from  $^{201}\text{Tl}$  ECG-gated myocardial SPECT data.

**Key words:**  $^{201}\text{Tl}$ , Gated SPECT, LV function.