

## Summary

### Assessment of Regional Quantitative Analysis by ECG-gated Myocardial SPECT after Coronary Artery Bypass Surgery

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**Purpose:** ECG-gated myocardial SPECT (G-SPECT) was performed before and after coronary artery bypass surgery (CABG) to investigate how this operation would affect the assessment of regional quantitative analyses. **Methods:** Nineteen patients with coronary artery disease underwent G-SPECT before and 1 month after uncomplicated CABG.  $^{99m}\text{Tc}$ -MIBI 740 MBq was injected at rest, then G-SPECT was performed 60 min later. Regional ejection fraction (rEF), wall motion (WM), systolic wall thickening (WT) and % tracer uptake were evaluated by quantitative gated SPECT program (QGS). Parameters were obtained quantitatively in 16 segments based on the functional bull's eye map. **Results:** Percent tracer uptake increased in septum from  $75 \pm 11\%$  to  $78 \pm 11\%$

( $p < 0.001$ ), while WT did not change ( $40 \pm 19\%$  to  $41 \pm 20\%$ ) after CABG. However, in septum rEF decreased from  $17 \pm 13\%$  to  $6 \pm 9\%$  ( $p < 0.001$ ) and WM decreased in septum from  $1.6 \pm 1.1$  mm to  $0.6 \pm 0.9$  mm ( $p < 0.001$ ). **Conclusion:** Significant reduction of rEF and WM despite of no deterioration of WT and % tracer uptake suggested that rEF and WM were affected by pseudoparadoxical asynergy after uncomplicated CABG. For the evaluation of regional function after CABG by G-SPECT, WT might be the preferred parameter.

**Key words:** ECG-gated myocardial SPECT, Coronary artery bypass graft (CABG), Septal motion, Quantitative gated SPECT (QGS), Technetium-99m sestamibi.