

## Summary

### **A Newly Developed Maneuver, Field Change Conversion (FCC), Improved Evaluation of the Left Ventricular Volume More Accurately on Quantitative Gated SPECT (QGS) Analysis**

Osamu TAJIMA\*, Masaki SHIBASAKI\*, Toshiko HOSHI\*\* and Kamon IMAI\*\*\*

*\*Department of Radiological Technology, Saitama Cardiovascular and Respiratory Center*

*\*\*Department of Radiology, Saitama Cardiovascular and Respiratory Center*

*\*\*\*Department of Cardiology, Saitama Cardiovascular and Respiratory Center*

**[Purpose]** To investigate whether a newly developed maneuver that reduces the reconstruction area by a half more accurately evaluates left ventricular (LV) volume on quantitative gated SPECT (QGS) analysis.

**[Methods]** The subjects were 38 patients who underwent left ventricular angiography (LVG) followed by G-SPECT within 2 weeks. Acquisition was performed with a general purpose collimator and a  $64 \times 64$  matrix. On QGS analysis, the field magnification was 34 cm in original image (Original: ORI), and furthermore it was changed from 34 cm to 17 cm to enlarge the re-constructed image (Field Change Conversion: FCC). End-diastolic volume (EDV) and end-systolic volume (ESV) of the left ventricle were also

obtained using LVG.

**[Results]** EDV was  $71 \pm 19$  ml,  $83 \pm 20$  ml and  $98 \pm 23$  ml for ORI, FCC and LVG, respectively ( $p < 0.001$ : ORI versus LVG,  $p < 0.001$ : ORI versus FCC,  $p < 0.001$ : FCC versus LVG). ESV was  $28 \pm 12$  ml,  $34 \pm 13$  ml and  $41 \pm 14$  ml for ORI, FCC and LVG, respectively ( $p < 0.001$ : ORI versus LVG,  $p < 0.001$ : ORI versus FCC,  $p < 0.001$ : FCC versus LVG).

**[Conclusion]** FCC was better than ORI for calculating LV volume in clinical cases. Furthermore, FCC is a useful method for accurately measuring the LV volume on QGS analysis.

**Key words:** QGS, Ventricular volume, Field change conversion, Magnification re-construct.