According to improvement of SPECT system, ECG-gated SPECT with $^{201}$TlCl have been applied to the left ventricular volumetry. In this study 24 patients without ischemia demonstrated by stress ($^{99m}$Tc-TF) and rest ($^{201}$TlCl) dual-isotope ECG-gated myocardial SPECT were enrolled. To evaluate left ventricular volumetry using $^{201}$Tl ECG-gated SPECT data, the left ventricular end diastolic volumes (EDV) were compared between Quantitative Gated SPECT (QGS) and Emory Cardiac Toolbox (ECT) as well as between dual-isotopes based on the same ECG-gated data.

The EDV values with $^{99m}$Tc data (EDV$_{TC}$) using QGS were well correlated with those using ECT ($r = 0.96$, $p < 0.0001$). Both QGS and ECT demonstrated well correlation between EDV$_{TC}$ ($r = 0.98$, $p < 0.0001$) and the EDV value with $^{201}$Tl (EDV$_{TI}$) ($r = 0.93$, $p < 0.0001$). However, QGS processing induced significantly lower EDV$_{TI}$ compared with EDV$_{TC}$. In contrast, EDV$_{TI}$ were significantly higher than EDV$_{TC}$ in ECT performance. The QGS errors subtracting EDV$_{TI}$ from EDV$_{TC}$ were more evident according to the left ventricular volume increase. On the other hand, ECT error showed no tendency associated with the left ventricular volume.

From these results, a careful strategy for selection of tracers and softwares should be necessary to assessment of quantitative values derived from ECG-gated SPECT data because of interaction with softwares, tracers, and subjects.

**Key words:** Gated myocardial SPECT, Left ventricular end diastolic volume, Quantitative Gated SPECT, Emory Cardiac Toolbox.