

## Summary

### **Transient Left Ventricular Dysfunction is Still Present One Hour after Exercise Stress Test: Evaluation by Gated SPECT with $^{99m}\text{Tc}$ -labeled Perfusion Agent**

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It has been reported that quantitative gated SPECT (QGS) has revealed post-stress dysfunction of the left ventricle (LV) 30 minutes after a stress test. The purpose of this study was to determine whether post-stress dysfunction of LV is still present one hour after an exercise stress test. The subjects comprised 152 patients (124 males and 28 females, mean age  $59 \pm 10$  years). Exercise stress myocardial scintigraphy was performed using a one-day, stress and rest protocol.  $^{99m}\text{Tc}$  labeled myocardial perfusion tracer, tetrofosmin, 370 MBq was injected at the end-point of a supine ergometer stress test for stress imaging. ECG gated SPECT was carried out 1 hour after injection. Three hours later, 740 MBq to 1100 MBq of  $^{99m}\text{Tc}$  labeled myocardial perfusion tracer was injected for rest imaging. ECG gated SPECT was again performed 1 hour after injection. We divided the subjects into

four groups according to the severity score of defects on the stress image and the presence or absence of fill-in; normal (NOR, n = 59), myocardial infarct (MI, n = 65), small ischemia (S-IS, n = 13) and large ischemia (L-IS, n = 15). Post-stress dysfunction is defined according to two criteria: 1) rest LVEF - post-stress LVEF  $\geq 5\%$  and 2) post-stress ESV - rest ESV  $\geq 5$  ml. The frequency of post-stress dysfunction was 3.4%, 9.1%, 23.1% and 40% in NOR, MI, S-IS and L-IS, respectively. Post-stress LV dysfunction was found to be more frequent in the large ischemia group. In conclusion, post-stress dysfunction was present 1 hour after the stress test and was more frequent in the large ischemia group.

**Key words:** Stunned myocardium, Exercise stress test, Myocardial ischemia, Quantitative gated SPECT.