

Reverse redistribution of Tc-99m-tetrofosmin in exercise myocardial SPECT in patients with hypertrophic cardiomyopathy

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We examined the usefulness of Tc-99m-tetrofosmin in detecting exercise induced perfusion abnormalities in patients with hypertrophic cardiomyopathy (HCM) and to clarify time-related changes in myocardial distribution of Tc-99m-tetrofosmin after a single injection. We studied 44 consecutive patients with HCM by means of exercise/rest Tc-99m-tetrofosmin single photon emission computed tomography (SPECT). After injecting 370 MBq of Tc-99m-tetrofosmin at the peak exercise, the early SPECT imaging was performed at 30 min (EX-30) and the delayed imaging at 180 min (EX-180). Immediately after the delayed imaging, 740 MBq of Tc-99m-tetrofosmin was injected in the resting state, and the rest SPECT imaging was performed 30 min later. Exercise-induced regional perfusion defects and/or apparent reversible left ventricular cavity dilation were identified in 26 (68.2%) of the 44 patients. When EX-30 images and EX-180 images were compared, reverse redistribution was confirmed in 36 patients (81.8%). Reverse redistribution was detected most frequently in the septal portion of the anterior wall, followed by the septal portion of the posterior wall and the septum. Exercise/rest Tc-99m-tetrofosmin myocardial imaging was a useful method for assessing myocardial perfusion abnormalities in patients with HCM. Reverse redistribution was detected very frequently on early and delayed images of exercise. We assumed that reverse redistribution may reflect a retention disorder of Tc-99m-tetrofosmin caused by some metabolic dysfunction of myocytes.

Key words: Tc-99m-tetrofosmin, hypertrophic cardiomyopathy, myocardial ischemia, reverse redistribution