

## Rapid data acquisition protocol in ECG-gated myocardial perfusion SPECT with Tc-99m-tetrofosmin

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Into 25 patients with heart disorders, <sup>99m</sup>Tc-tetrofosmin 555-740 MBq was injected intravenously at rest. After 40 minutes, ECG-gated myocardial perfusion SPECT was performed with a two detector gamma camera VERTEX (ADAC), setting up two detectors to form a 90-degree angle. Sixteen frames per R-R interval were acquired during a 180° rotation from the RAO 45° to the LPO 45°. A pair of data sets with standard (SDA) and rapid data acquisition (RDA) protocols was collected. In an SDA protocol, SPECT imaging was performed for 50 sec per step in 5° angular steps (total acquisition time; 15 minutes). An RDA protocol was conducted with 12 sec per step, 6° angular steps (acquisition time, 3 minutes). LVEF (%) and LVEDV (ml) quantitated automatically with a QGS program showed excellent correlations between two protocols with correlation coefficients of 0.980 ( $p < 0.01$ ) and 0.983 ( $p < 0.01$ ), respectively. Subsequently visual assessment of regional wall motion based on a four-point grading system was carried out with a 3-D cine LV display. High complete agreement was gained with 158 (90.3%) out of total 175 segments, so that assessment of the global and regional LV function with the RDA protocol demonstrated high reliability and feasibility.

**Key words:** technetium-99m-tetrofosmin, Single-photon emission computed tomography, left ventricular ejection fraction