Surveillance study for creating the national clinical database related to ECG-gated myocardial perfusion SPECT of ischemic heart disease: J-ACCESS study design

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Background: ECG-gated myocardial perfusion SPECT is widely applied to diagnose ischemic heart disease, and such findings are useful to predict patient prognosis. However, Japan does not have a database that correlates SPECT image findings with the prognosis of patients who have ischemic heart disease. *Methods:* A large-scale clinical study involving 117 medical facilities throughout Japan was established to survey the clinical background and image findings of patients who have undergone ECG-gated stress perfusion SPECT. These patients were followed up for three years to investigate the occurrence of cardiac events. *Results:* The 4,629 registered patients comprised 2,989 males (age 64.9 ± 10.3 y, mean ± SD) and 1,640 females (age 67.2 ± 9.7 y). The most frequent complication was hypertension (54.5%), followed by hyperlipidemia (47.2%) and diabetes (29.4%). Percutaneous coronary intervention (PCI) or coronary artery bypass grafting (CABG) was conducted on 1,925 of the patients. SPECT examinations were ordered for further examination of chest pain (32.8%), periodic follow-up after coronary artery intervention (24.2%), screening for coronary artery disease (15.1%), follow-up of old myocardial infarction (14.9%), more detailed investigation of ECG or echocardiographic abnormalities (13.1%), etiological assessment of heart failure (1.6%), and further inspection for acute coronary syndrome (0.3%). The method of inducing stress was most often exercise loading at 68.8%, and infusion of either dipyridamole (14.6%) or adenosine triphosphate (ATP, 13.8%). The most frequently applied amount of ^{99m}Tc-tetrofosmin was an initial dose of 200 to 300 MBq combined with a second dose of 700 to 800 MBq (37.7%). The mean doses were 305 ± 81 at the initial and 709 ± 132 MBq at the second administration. A history of angina pectoris (41.2%) was the most frequent, followed by myocardial infarction (29.5%). *Conclusions:* During the two years of follow-up after registration, 46 of the 4,629 subjects have discontinued or dropped out, 134 have died, and 4,449 (97.8%) continue to undergo follow-up investigations. A complete report will be presented when the follow-up data for 3 years have been compiled and analyzed.

Key words: ischemic heart disease, ECG-gated SPECT, ^{99m}Tc-tetrofosmin, prognostication, J-ACCESS