

Nuclear Imaging Studies of the Typical Form of Takotsubo Cardiomyopathy at Different Time Points of Disease.

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BACKGROUND: Tako tsubo cardiomyopathy is characterized by a reversible regional, typically apical, systolic dysfunction. Previous single photon emission computed tomography (SPECT) studies conducted in small cohorts reported a characteristic time course related findings, ranging from fixed, large perfusion defects at the acute phase, to nearly normal or normal appearing studies during the recovery phase.

OBJECTIVE: To describe the nuclear imaging findings at different time points of the disease of patients diagnosed with Takotsubo cardiomyopathy during the years 2004-2009.

METHODS: Forty two consecutive patients were diagnosed with Tako tsubo cardiomyopathy due to the presence of chest pain during either emotional or physical stress, ST segment changes, suggestive echocardiographic findings, elevated Troponin I levels and coronary angiography with narrowing of <50% of the epicardial coronary arteries. Twelve of these patients (28%) (mean age 61.8 years, range 50-84 years, 91% female) underwent a rest/redistribution Thallium-201 SPECT imaging. The SPECT studies were conducted at different time points, ranging from 3 to 14 days from pain onset (mean 7.1 days).

RESULTS: In 8 out of 12 patients, (66%) SPECT imaging was performed during the acute and sub-acute phases, 2 to 7 days, (mean 4.6 days) from symptom onset and demonstrated a fixed perfusion defect, ranging from small to large in size. Their mean left ventricular ejection fraction (LVEF) was 31%. In the remaining 4 patients, the SPECT imaging was performed at a later time period (12 to 14 days, mean 13 days from symptom onset) and showed a normal perfusion scan in all. The mean LVEF at that time period was 57.2%.

CONCLUSIONS: SPECT perfusion studies of patients with Tako tsubo cardiomyopathy obtained at different time points from symptom onset demonstrate a typical pattern which is in accordance with previous reports and with the clinical and echocardiographic findings of these patients.