holes collimator, the data were transferred to the radioisotope data processing system (JAC-120M) and recorded on magnetic tape. Soon after injection of ^{201}Tl (2 mCi), serial images were taken 60 frames (one frame=one second). And 2 or 3 minutes after injection, serial images were taken 30 frames (one frame=20 seconds). Static images of several projection such as anterior ivew, left anterior oblique 30, left anterior oblique 45, left lateral view, right anterior oblique view 30, and anterior view were taken one another after.

Early images were observed for flow of right ventricle, second serial images for the uptake curve of the myocardial wall and the decreased curve of the lung.

ROI of myocardium, lung and cavity of left ventricle were measured to set on early (after 20 min.) and late (after 60–80 min.) images of anterior view, using radioisotope data processing system. Ratio of myocardium to the lung (1) and myocardium to the cavity of left ventricle (2) were calculated as follows

	20 min.	60–80 min.
(1)	2.0 –2.76(2.37)	2.2 –3.3 (2.75)
(2)	1.04–1.38(1,21)	1.04–1.64(1,24)

( )=mean value

The results showed that we can obtain good myocardial images within 60–80 minutes after injection.

Comparison of ^{201}Tl Myocardial Imaging with Vectorcardiogram and ^{99m}Tc Angiogram

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^{201}Tl myocardial imaging, Vectorcardiogram and ^{99m}Tc angiogram were performed in 34 patients (25 patients with myocardial infarction and 9 controls). Findings of three methods well agreed with each other, but some discrepancies were found. Septal myocardial infarction was more frequently diagnosed by Vectorcardiogram than by ^{201}Tl myocardial imaging. Patients with inferior myocardial infarction diagnosed by Vectorcardiogram had cold image of ^{201}Tl myocardial imaging at anterioinferior or posteroinferior region of myocardial image, but 2 patients with anterioinferior cold image had not inferior infarction pattern in Vectorcardiogram. Asynergy in ^{99m}Tc angiogram was useful for indirect evidence of existing of myocardial infarction.

Analysis of Radioisotopic Dilution Curve by Non-linear filter

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Recently, utilization of mini-computer for processing dynamic radionuclide data such as identification of turn over rate of the tracer and construction of parametric image has become popular. Since the data are obtained from random decays of radionuclides, they includes noise inevitably, and are also contaminated by background or recirculation.

Extended Kalman filter was applied to radioisotopic dilution curve analysis of the first order system, considering input noise and observation noise, and compared with conventional analysis.

Computer simulation of the first order system including Poissonian noise was performed, and time constant was also identified for the radionuclide dilution curve which was obtained from phantom model. The identified parameters by this filter yielded good results compared with