
In order to diagnose the site of myocardial infarction, we studied relation between the site of infarction and coronary artery, and program of diagnosis was developed. We studied 30 patients with myocardial infarction. (16 patients with LAD lesion, 6 patients with LCX lesion, 8 patients with RCA lesion). Circumferential profile curve was created in 10 shortaxis sections with SPECT, and we devised infarction map. Coronary perfusion territories were determined by mean infarction area in each sections. Territory map was developed by this method. LAD territory was overlapped in apex and anteroseptal with RCA territory. LCX territory was overlapped with LAD and RCA territory. The infarct size was 60% in LAD lesion, 15% in LCX lesion, 40% in RCA lesion. Automatic diagnosis was done by this territory map. Whereas LAD lesion was divided 2 groups (group 1: proximal lesion to 1st diagonal branch, group 2: distal lesion). The deference was lateral wall infarction in two groups. We conclude that this diagnostic program may be useful in deferential diagnosis of coronary artery lesion.


Coronary arteriogram was performed in 136 suspected ischemic heart disease patients. In 50 normal, 41 angina pectoris and 45 myocardial infarction, sensitivity(SE) and specificity(SP) of the electrocardiogram(ECG), planar and tomographic(SPECT) TL-201 scintigram for the detection of coronary artery disease (more than 50% stenosis) were analyzed. SE of ECG, planar and SPECT in myocardial infarction group were 88.95, and 98%, and SP were 89.80 and 59% respectively. In the group of angina pectoris, each SE was 78, 61, 81% and SP was 80, 100, 90% respectively. Thus, high SE of ECG and TL-201 imaging using nonreversible defect for the detection of myocardial infarction was noted, although SP of the SPECT was low. In the tomographic imaging, false positive diagnosis for infero-posterior infarction was frequent. SE in the group of angina pectoris was lower than that in myocardial infarction, since the diagnosis of angina pectoris using reversible defect was difficult in some cases with mild coronary stenosis (51-75%) or those with old myocardial infarction.


Correlation between TL-201 right ventricular accumulation shown in SPECT and right ventricular systolic pressure is evaluated in patients with 12 right ventricular overload disease and 7 normal right ventricular pressure. On a short axis slice of about 20mm thickness, polygonal ROI are chosen so as to include as much myocardial wall as possible. The counts in ROI are divided by the path length of the ventricular wall in the ROI and the result value show the average Thallium uptake per path. Those suggest the degree of wall thickness if it was supposed that the count in ROI represents the volume of myocardium. Though other methods (box ROI, maximum count in the ROI) were done, as the result, our polygonal ROI method shows most excellent correlation (r = 0.88 with ASD and r = 0.96 without 2 ASD cases) to the values of right ventricular systolic pressure. Besides, especially in the case of comparatively mild right over load, the polygonal method shows fairly good sensitivity and clearly separate them from normal pressure case. As a conclusion, TL-201 myocardial SPECT appears to be a sensitive technique for assessing right ventricular overloading.