The value of exercise T1-201 myocardial perfusion imaging (MPI) for identifying diseased arteries was evaluated in 57 effort angina patients without previous myocardial infarction. The territory of the individual major coronary artery on stress myocardial images was determined by analysis of the site of perfusion defects in 29 patients with single vessel or isolated left main disease. EX MPI was sensitive for identifying the diseased artery in single vessel disease, the sensitivity being 86% for LAD, 66% for LCA and 71% for RCA. However, the sensitivity tended to decrease as the number of diseased vessels increased. An improved sensitivity was observed by analysis of the regional myocardial washout rate of T1-201 in patients with triple vessel disease. The sensitivity increased, in general, with the severity of stenosis and it was lower for a less severely diseased artery in multiple vessel disease. The presence or absence of coronary collaterals seemed not to affect the sensitivity of EX MPI. In conclusion, EX MPI was considered to be a useful noninvasive technique to detect the diseased coronary arteries in patients with single vessel disease or the most severely diseased artery in patients with multiple vessel disease.