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# The diagnostic value of exercise load nuclide myocardial perfusion imaging for coronary heart disease

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**Abstract:** Objective To explore the diagnostic value of exercise load nuclide myocardial perfusion imaging for coronary heart disease. Method: A total of 117 suspected cases of coronary heart disease were diagnosed using coronary angiography (CAG) results as the diagnostic criteria. Two types of examinations were performed: electrocardiogram treadmill activity test and exercise load nuclide myocardial perfusion tomography, and the results were compared and analyzed. Compared with the CAG results, the sensitivity and specificity of the electrocardiogram treadmill activity test in diagnosing coronary heart disease were 60% and 73%, respectively; The sensitivity and specificity of exercise load nuclide myocardial perfusion imaging in diagnosing coronary heart disease are 87% and 69%, respectively. Conclusion: Compared with the electrocardiogram treadmill activity test, exercise load nuclide myocardial perfusion imaging has high sensitivity and similar specificity, and has important value in non-invasive diagnosis of coronary heart disease.

**Keywords:** Coronary angiography; Electrocardiogram tablet activity test; Exercise load nuclide myocardial perfusion imaging

Non invasive examination is still the most commonly used method for diagnosing coronary heart disease (CHD). ECG treadmill activity test and resting nuclide myocardial perfusion tomography have certain clinical significance for the diagnosis and functional evaluation of CHD, but both have low sensitivity and specificity. This article focuses on 117 patients suspected of CHD, using CAG as the diagnostic basis. During the same period, electrocardiogram (ECG) treadmill activity test and exercise load nuclide myocardial perfusion imaging were performed, and the results were compared with CAG diagnosis to evaluate the diagnostic value of exercise load nuclide myocardial perfusion imaging for coronary heart disease.

CAG remains the "gold standard" for diagnosing coronary heart disease, but it is limited due to its traumatic nature. Finding an ideal non-invasive diagnostic method for coronary heart disease has important clinical value. At present, non-invasive methods for diagnosing coronary heart disease include electrocardiogram, dynamic electrocardiogram, electrocardiogram exercise test, nuclide myocardial perfusion imaging, nuclide myocardial blood pool imaging, etc. Among them, the electrocardiogram treadmill activity test and nuclide myocardial perfusion imaging have higher diagnostic value. Is the combination of the two exercise nuclide myocardial perfusion imaging more valuable for the diagnosis of coronary heart disease? Garber et al. summarized the results of 132 electrocardiogram treadmill activity tests and found that their sensitivity and specificity in diagnosing coronary heart disease were 68% and 77%, respectively. The sensitivity and specificity of this electrocardiogram treadmill activity test in diagnosing coronary heart disease were similar to those reported by Laufer et al., indicating that its specificity in diagnosing coronary heart disease was high but its sensitivity was poor. The sensitivity of exercise nuclear myocardial perfusion imaging in diagnosing coronary heart disease in this group is significantly higher than that of electrocardiogram treadmill activity test, and the specificity is similar to it, indicating that its diagnostic value for coronary heart disease is higher than that of electrocardiogram treadmill activity test. The reason for the low specificity of nuclide myocardial perfusion imaging in the diagnosis of coronary heart

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disease in this study may be: 1. Some myocardial diseases may affect the uptake of nuclides by myocardial cells, and myocardial imaging may also show radiosparsity or deficiency; 2 Excessive fat in the diaphragm and lateral chest wall, as well as radiation attenuation caused by female breasts, can cause "radioactive sparsity" artifacts in the lower, lateral, and anterior walls, leading to misdiagnosis as myocardial ischemia and an increased false positive rate; This is related to the relatively small number of cases in this study.

In summary, the electrocardiogram treadmill activity test has high specificity in diagnosing coronary heart disease, but its sensitivity is not strong; Exercise load nuclide myocardial perfusion imaging examination will significantly improve diagnostic sensitivity and is an ideal non-invasive diagnostic method for coronary heart disease.

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