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Availability of ^{111}In-labeled platelet scintigraphy in patients with postinfarction left ventricular aneurysm

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Eighteen patients with postinfarction left ventricular aneurysms (LVAs) were examined with Indium-111-labeled autologous platelet scintigraphy to identify intracardiac thrombi and to investigate the effect of antithrombotic agents on thrombogenesity within their LVAs. Left ventriculography (LVG), and two-dimensional echocardiography were also carried out to assess the diagnostic ability of the platelet imaging.

Indium-111-platelet scintigraphy for the detection of LVA mural thrombi had a sensitivity of 60% and a specificity of 100%. Four of six patients with false-negative scintigraphic studies had been under antiplatelet therapy. Eight of the nine patients who had showed active platelet deposition on initial examination had not received antiplatelet therapy. Thereafter, five of these nine were treated with tichlopidine (300 mg/day) for 29.8±5.0 days. On the second platelet study, two had resolution and the other three had interruption of intra-aneurysmal deposition, which remained positive. In only one patient of the three, the third platelet study was performed after warfarin therapy. It took two weeks after beginning the therapy to completely interrupt platelet deposition within the LVA in this patient.

ECG gated radionuclide ventriculography and Thallium-201-myocardial scintigraphy were also performed to assess left ventricular wall motion of left ventricular ejection fraction (LVEF) and myocardial blood perfusion.

Thallium-201-SPECT showed apical or anteroapical perfusion defects and the radionuclide ventriculography correctly identified all 18 apical and anteroseptal aneurysms which were confirmed by LVG methods.

The comparison between the thrombus positive group and the thrombus negative group was carried out on both the LVEF and the period from the last myocardial infarction to the initial platelet scanning study. There were no statistical differences in the LVEF and the interval (34.5±12.5% vs 37.3±14.6%, 39.6±52.6 days vs 89.6±108.3 days) between the two groups.

These results suggest that Indium-111-labeled platelet scintigraphy can be a reliable method for the identification of active left ventricular mural thrombi and a practical method of judging antiplatelet and anticoagulant therapy.

Key words: Left ventricular aneurysm (LVA), Indium-111-platelet scintigraphy, Antithrombotic therapy