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PLATELET SURVIVAL AND SCINTIGRAPHY IN ATHEROSCLEROTIC VASCULAR DISEASE. Y.Isaka, K.Kimura,A.Uehara,H.Etani,T.Kozuka,O.Uyama S.Yoneda,K.Hashikawa and T.Kamada. Osaka University Medical School,Osaka.

Platelet survival time measurements and imagings were performed using autologous indium-111 labeled platelets in 22 patients with atherosclerotic vascular disease to assess platelet interaction with vascular lesion in vivo. Weighted mean and gamma function analyses were carried out on the platelet survival. In 22 patients, 7 patients were positive for platelet accumulation in vivo and other 15 patients were negative. The patients having positive platelet accumulation showed significantly decreased platelet survival time when compared with negative group (7.4 ± 0.7 vs 8.2 ± 0.7 , weighted mean; $P < 0.05$). It is concluded that the accumulation of platelet observed in the scintigraphy, can reduce the platelet survival although the exact mechanism is not yet clear.

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ON THE In-111-OXINE PLATELET SCINTIGRAPHY OF THE THROMBOSIS IN THE MIDDLE-SIZED VESSELS.

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In-111-oxine platelet scintigraphy has been studying in our institute for the detection of aortic aneurysm and intracardiac thrombus.

In this time,the platelet scintigraphy was applied to the thrombosis of the middle-sized or peripheral vessels. Scinti-images were taken at 48 hours or 72 hours after the injection of the radionuclide pharmaceuticals.

It was thought that arterial thrombus could accumulate strongly and venous thrombus modelately. This scintigraphy is useful in the distribution and the activity of these thrombosis.

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NATURAL HISTORY OF PLATELET DEPOSITION ON DACRON AORTIC BIFURCATION GRAFTS.

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Indium-111 platelet and technetium-99m HSA blood-pool scintigraphies were performed on 11 patients in 2 to 5 weeks after graft implantation and at a mean of 22 weeks (range 20 to 25 weeks) and again 54 weeks (range 50 to 60 weeks) in 6 of these patients. Quantitative analysis was performed using a platelet accumulation index that compared indium-111 platelet activity on the luminal surface of the graft to those of circulating in the blood pool. The platelet accumulation index (%) progressively decreased from 50.4 ± 25 (± 1 SD) at 2 to 5 weeks to 27.8 ± 13.2 at 22 weeks ($P < 0.05$). There was no further decrease at 55 weeks. It is concluded that platelet deposition on Dacron grafts decrease over 22 weeks, but it remains readily detectable in most patients at 1 year.

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IMAGING OF EXPERIMENTAL RABBIT ARTERIAL THORMBUS BY USHIN I-131 LABELED MONOCLONAL ANTIBODIES AGAINST PLATELETS. T.Nakashima, Y.Ishii, K.Yamamoto, K.Endo, H.Sakahara, M.Koizumi, Y.Kawamura, M.Kunimatsu, Y.Matsuoka and K.Torizuka. Fukui Medical School, Fukui, and Kyoto University School of Medicine, Kyoto.

For the diagnosis of arterial thrombosis, In-111 labeled autologous platelets has been used. However, troublesome labeling procedures has hindered its widespread clinical application. Instead of platelets, we tried anti-platelets monoclonal antibodies labeled with I-131 for visualization of experimental rabbit arterial thrombus.

Materials and Methods: Anti-platelets monoclonal antibodies are produced by hybridoma technique. Antibody labeling of I-131 was performed by chloramin T method. Rabbit arterial thrombus was induced by corroding femoral artery with 10% AgNO₃ solution. Labeled antibody was injected intravenously one hour after thrombus induction, and scintigraphic images were serially taken. After taking 24 hour image, the animal was sacrificed and radioactivity of main organs was measured.

Results: 24 hours after injecting antibody, arterial thrombi were visualized in all four rabbits. Tissue to blood ratios of radioactivity were as high as 5 to 8 in spleen, while in all other organs remained lower than one. Artery containing thrombus in it, showed very high values of 8 to 15.