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NEUTROPHIL LABELING WITH In-111-OXINE (CONTINUED). APPLICATION TO NEUTROPHIL KINETICS. T.Uchida, S.Matsuda, T.Yui, H.Kimura, T.Tanaka, S.Kariyone, T.Kida and M.Saito. Fukushima Medical College, Fukushima.

Previous in vitro studies showed that neutrophil labeling with In-111-oxine had high labeling efficiency and maintained a good viability due to trypan blue exclusion test and phagocytosis index. In this congress, in vivo neutrophil kinetic studies by In-111-oxine labeled neutrophils were reported. Normal labeled neutrophils disappeared with 7.0 hours of T_{1/2}, which is comparable with DF³²P labeled neutrophils, and sequestered into lungs, liver and spleen. Prolonged survival and marked accumulation in huge spleen and liver were evident in chronic myelogenous leukemia. In congestive splenomegaly, however, survival was short and labeled neutrophils were accumulated in the spleen. In patients with panaritium or anal abscess of acute leukemia, labeled neutrophils were accumulated in the infected area (Figure).



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PLATELET LABELING WITH In-111 OXINE (II) SCINTIGRAPHIC DETECTION OF THROMBI IN MAN. T.Yui, T.Uchida, S.Matsuda, S.Muroi, T.Tanaka, M.Saito, T.Kida and S.Kariyone. Fukushima Medical College. Fukushima.

Our study was undertaken to evaluate the usefulness of autologous platelet with In-111 oxine for detection of thrombi in man. Platelets were separated using differential centrifugation from 44ml venous blood obtained in 6ml ACD solution and suspended in ACD-saline solution. 300µCi of In-111 oxine was added in the platelet suspension and incubated for 30min at room temperature. 150µCi of labeled platelets resuspended in autologous plasma was injected to the patient. Imaging by scintillation camera and platelet survival study was done simultaneously. Four patients suspected of thrombi were studied. Case 1 (70-year old male) and case 2 (75-year old male) were implanted Dacron graft 6 years and 4 years before, because of aortic aneurysms. Case 3 (33-year old male with mitral stenosis) and case 4 (69-year old female with mitral stenosis) have been suspected of intracardiac thrombi by contrast cardiography or ultrasonic cardiography. Unusual platelet deposition at the aortic graft in case 1 and 2, and left atrial thrombus in case 3 and 4 were clearly detected by camera images. Platelet survival time was shortened in case 1 (3.4 days), case 2 (3.7 days) and case 4 (5.6 days), and was normal in case 3 (7.3 days). In-111 oxine labeled platelets would be useful for the detection of thrombi and also simultaneous observation of platelet survival time.

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ORGAN DISTRIBUTION OF In-111-OXINE LABELED LYMPHOCYTES IN CHRONIC LYMPHOCYTIC LEUKEMIA AND MALIGNANT LYMPHOMA.

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Lymphocyte survival and organ distribution were studied by In-111-oxine labeled autologous lymphocytes in 2 patients with chronic lymphocytic leukemia (CLL), 6 with malignant lymphoma, a patient with adult T cell leukemia after splenectomy. Disappearance curve of the labeled lymphocytes showed two exponential components in all cases. The half time of the first component was within 1 hour in all cases. The half time of the second one was 192.6 hours for T cell type and 33.0 hours for B cell type in CLL and 58.7±20.1 hours in malignant lymphoma. In a splenectomized case, the half time of the first component was 3.5 hours. It seems that the first component of the disappearance curve is influenced by the presence of spleen, but second one is not influenced by the size of spleen, swelling of lymph nodes or blood lymphocyte counts. According to the observation on the organ distribution with scintillation camera, the labeled cells accumulated in the lungs and liver immediately after the infusion, then in the spleen most remarkably 1 hour after the infusion. The radioactivity over the lymph nodes were observed after 18 hrs.